The Bradshaw Lecture

ON

INFANTILE SCURVY AND ITS RELATION TO RICKETS.[1]

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MR. PRESIDENT,—Eleven years ago I submitted to the consideration of members of our profession the results of an analysis of thirty-one cases of what I believed to be infantile scurvy. Such cases, though scantily reported in England, were well known in German medical literature and described under the title of "acute rickets." So far back as 1873 Dr. Ingerslev, a Swedish physician, had suggested the scorbutic nature of one case under his care. But scurvy had been dismissed by the German school, amongst other reasons because no sponginess of the gums was to be found in many of the cases. In 1881 Dr. Gee had given a brief but graphic description of five cases under the title of "osteal or periosteal cachexia." He insisted that the obscure symptoms referable to the bones and the cachexia were not explicable by either rickets or congenital syphilis. But in 1878 three cases were fully described by Dr. Cheadle, in which definite sponginess of the gums occurred and likewise obscure symptoms referred to the lower limbs. These cases he claimed on clinical grounds to be true scurvy. In 1879 and in 1882 Dr. Cheadle published further examples, and he suggested that the disease could be grafted on a rickety stock. Dr. Cheadle's papers laid down the original lines of the true interpretation of the disease which we have to consider, and I do not think that anything has invalidated the soundness of his conclusions. There had been a singular paucity of pathological evidence on this subject, and I was able, as the result of three post-mortem examinations, to formulate the anatomical substratum, which appeared to explain many of the symptoms found. I propose to review the main clinical and anatomical features of the group, to give the conclusions deduced eleven years ago, and then to state how far these have been modified by subsequent investigation and criticism.

The group of symptoms to which attention is called has generally a rather sudden onset, beginning at any period after the age of four months, but predominantly in what may be called the second period of infancy—that is to say, from the age of nine months to that of eighteen months. The child is generally rickety, but fairly clothed so far as subcutaneous fat is concerned. There may have been antecedent digestive troubles, or, on the other hand, in respect to obvious symptoms little to show; but a careful observer will have noticed a certain amount of pallor. Suddenly, without obvious cause, the child becomes fretful in a special way. So long as it is left alone it is tolerably quiet. The lower limbs are kept drawn up and still, but when placed in its bath or otherwise moved there is continuous crying, and it soon becomes clear that the pain is connected with the lower limbs. At this period the upper limbs may be touched with impunity, but any attempt to move the legs or thighs gives rise to screams. Next, some obscure swelling may be detected, first on one lower limb, then on the other, though it is not absolutely symmetrical. The skin still remains pale, and there are no local heat and no pitting. The swelling is ill defined, but is suggestive of thickening round the shafts of the bones beginning above the epiphysial junctions. Gradually the bulk of the limbs affected becomes visibly increased. No fluctuation can be obtained, but a little œdema may now appear on the feet. The position of the limbs becomes somewhat different from what it was at the outset. Instead of being flexed they lie everted and immobile, in a state of pseudo-paralysis. The knee-jerks may be obtained, and likewise the plantar reflexes. About this time, if not before, great weakness of the back becomes manifest. A little swelling of one or both scapulæ may appear and the upper limbs may show changes. These are rarely so considerable as the alterations in the lower limbs. There may be swelling above the wrists, extending for a short distance up the forearm, and some swelling in the neighbourhood of the epiphyses of the humerus. There is symmetry of lesions, but it is not absolute; and the limb affection is generally consecutive, though the involvement of one limb follows very closely upon another. The joints are free. In severe cases another symptom may now be found—namely, crepitus in the regions adjacent to the junctions of the shafts with the epiphyses. The upper and lower extremities of the femur and the upper extremity of the tibia are the common sites of such fractures; but the upper end of the humerus may also be so affected. Rarely a fracture occurs in the femur at some distance from the epiphyses. A very startling appearance may be observed at this period in the front of the chest. The sternum, with the adjacent costal cartilages and a small portion of the contiguous ribs, seems to have sunk bodily back, *en bloc*, as though it had been subjected to some violence, which had fractured several ribs in front and driven them back. Occasionally thickenings of varying extent may be found on the exterior of the vault of the skull, or even on some of the bones of the face. There is great tenderness, but, as with the other lesions, there is no local heat and there is seldom change of colour. Here also must be mentioned a remarkable eye phenomenon. There develops a rather sudden proptosis of one eyeball, with puffiness and very slight staining of the upper lid. Within a day or two the other eye presents similar appearances, though they may be of less severity. The ocular conjunctiva may show a little ecchymosis or may be quite free. With respect to the constitutional symptoms accompanying the above series of events, the most important feature is the profound anæmia which is developed. Whatever there may have been at the onset, when once the limb affection has become pronounced the pallor becomes intensified. The anæmia is proportional to the amount of limb involvement. As the case proceeds there is a certain earthy-coloured or sallow tint, which is noteworthy in severe cases, and when once this is established bruise-like ecchymoses may appear, and more rarely small purpuræ. Emaciation is not a marked feature, but asthenia is extreme and suggestive of muscular failure. The temperature is very erratic; it is often raised for a day or two when successive limbs are involved, especially during the tense stage, but is rarely above 101° or 102° F. At other times it may be normal or subnormal.

Let us now consider the digestive tract. The condition of the gums is very important. Defective observation on this point has led to frequent misconceptions as to the nature of the disease. Stated generally, the gum condition may be said to bear a definite relation to the number of teeth which have appeared. If several teeth have appeared, considerable sponginess of the gums may be manifest. Fleshy swellings form, which even project from the mouth and give rise to bleeding and fœtor. But if only a few teeth have appeared the sponginess may be slight though definite, forming a narrow, fleshy ridge round each tooth. If no teeth have appeared the gums may be normal or may present small, bluish extravasations over the sites of the on-coming teeth. The condition of the gums sometimes gives rise to trouble in feeding. Occasionally there is nose bleeding. As a rule the appetite is fair; sometimes it is ravenous. There is seldom vomiting or diarrhœa, but a few cases have been recorded of blood in small quantities being passed per anum. The urine often contains a trace of albumen and a little blood. It is sometimes scanty in amount, and coarse concretions of uric acid may be passed. In rare cases the spleen is a little enlarged. Except in fatal cases the heart and lungs give rise to no symptoms. What is the course of this disease? If the cachexia is very profound the supervention of bronchitis, pleuro-pneumonia, severe diarrhœa, or an intercurrent exanthem may bring about a fatal issue. It is sometimes a relapsing disease, and may run a chronic course over many months; but the average duration, when uninfluenced by treatment, is from two to four months. The chief interest of the disease turns on the limb affection, and its progress I will follow with a little more detail. First, with regard to the cases in which no fractures are detected. By slow degrees the swelling subsides, and with it the tenderness lessens. There is considerable wasting of the muscles, and it becomes evident now that there is a

[1] The lecture was illustrated throughout with copies of drawings from the author's original paper, which was published in the Transactions of the Medico-Chirurgical Society, vol. lxvi., p. 159 et seq.

sheath of firm, resisting tissue round part of the bone shaft which has been chiefly affected. This is most commonly found round part of the femur, but may be traced round part of the tibia also. Such sheaths, although often found in both lower limbs, are not generally of equal extent on the two sides. It may take months before these osseous sheaths are absorbed. By degrees voluntary mobility is restored, and the child also begins to raise itself from the horizontal posture. In the cases in which fractures occur near the epiphysial junction there is satisfactory repair, with little or no deformity. The same may be stated with respect to the ribs. In the rarer event, when the fracture occurs in the middle of the shaft, there is often an extensive callus, with some deformity. The anæmia, the hæmorrhages, the asthenia, and the pain subside *pari passu* with the clearing up of the limb affection. Thus far on the clinical side; let us now consider what post-mortem investigation teaches. The essential lesion is a subperiosteal blood extravasation, with its secondary consequences. Thus, around the shaft of the femur there is an extensive sheath of blood-clot, which intervenes between the periosteum and the shaft, except for a short distance at the upper extremity. A fracture had occurred through the junction area, between the lower epiphysis and the shaft. The surfaces were rough, but not splintered. There was evidence of rickets in the loose spongioid ossification of this region and also in the diffuse ossifying centre of the lower epiphysis. The periosteum was intensely vascular, but there was no lymph or pus. In the muscles of the thigh the superficial layers contained a certain amount of pale yellow blood serum, which to some extent macerated the muscular tissue. In the deeper layers there was extensive blood-clot, pretty evenly disseminated. The periosteum of the right tibia was also thickened and vascular. There was blood extravasation between it and the shaft along the whole length. Fracture was present in the loose, imperfectly ossified region connecting the shaft with the epiphysis. The trabecular structure in the interior of the bone broke down easily, and there was much hæmorrhage in the medulla of the shaft. The ossifying centre of the epiphysis and the loose ossification in the junction area resembled what was found in the femur. There was extensive blood extravasation in the deeper layers of the muscles of the leg. The periosteum of the fibula was only slightly detached, but it was very vascular, and there was slight extravasation near the extremities. The bones of the other side were similarly affected, though not quite to an equal amount. The scapulæ were very interesting. They showed extensive blood extravasations on both dorsal and ventral surfaces. The dorsal extravasations associated with muscular extravasations had given rise to swellings which had been obvious during life. On the ventral surface the upraised periosteum had deposited a thin, new layer of osseous material, in this respect resembling the bony sheath which had been felt during life, in the middle stage of the recovering cases, on the shafts of the lower limb bones. The humerus in this case showed no subperiosteal effusion, but in addition to the evidences of spongioid ossification revealed extensive hæmorrhage into the medulla. I may refer to the condition of the ribs in another case. The periosteum was found extensively detached, with much chocolate-coloured detritus of broken-down blood-clot between the periosteum and the rib. The ribs themselves were quite bare and were broken away close to the junction region with the costal cartilages. On section of the ribs it was found that the bony material was a mere shell, and there was an extensive endosteal extravasation. The cranium showed thin areas of subperiosteal hæmorrhage in the neighbourhood of porous bone on both parietals. There were extensive blood and serum extravasations in the thigh muscles, the muscles being wasted, and subperiosteal extravasations were found in connexion with the innominate bone and the femora. The other case here illustrated showed changes almost identical with those which I have described. I need not further particularise them, but will only mention two points of interest. Although there was no fluid effusion into any joint, there was a minute extravasation into the synovial membrane of one hip-joint.

The specimens from these cases are on the table, and microscopical examination of the bones confirmed the naked-eye appearances. The periosteum was vascular and thickened, but without cellular infiltration. The bone presented extensive absorption of trabecular structure, showing large spaces with eroded margins, and at the junction regions characteristic rickety ossification. The visceral changes were not very important. In one case there was blood-stained serous effusion in one pleura, with extensive petechiæ on the parietal pleura; in another there was a hæmorrhagic focus in one lung with a little lymph over it; in a third there was some splenic enlargement, with blood extravasation under the capsule, and with some also into the substance. In the light of these anatomical substrata, we are now able to explain many of the symptoms which I have described. The special characters of the lower limb swelling—namely, the deep thickening referred to the neighbourhood of the bone shaft,—the solid effusion into the muscular masses, the exquisite tenderness, the pseudo-paralysis, and the absence of local heat or redness are all in harmony with the conditions found post mortem. The absence of any true inflammatory sign is in harmony with the general absence of persistent pyrexia. The occasional moderate elevation of temperature may well be explained by the tension set up by the blood effusion beneath a rather resisting membrane. The anæmia, which becomes so profound after the onset and which is increased after each fresh involvement of a limb or portion of a limb, is explained by the successive internal hæmorrhages, which are just as much an impoverishment as if the blood had been discharged from the body. The fractures are not difficult to understand when we consider not only the lack of support outside the shaft in consequence of the stripping up of periosteum, but also in the advanced cases the hæmorrhage into the centre of the shaft with the extensive absorption of trabecular structure. In no bones is this internal absorption, combined with extravasation outside and inside, carried to a greater degree than in the ribs, and this explains the extraordinary deformity of the chest to which I have referred, which deformity when it occurs is almost pathognomonic of the disease in question. The irregular bony sheaths round the long bone, felt during the middle stage of recovery of the severe cases, are due to the osseous material which has been thrown out by the upraised periosteum, and are analogous to what is found round the base of a recovering cephalhæmatoma.

The extremely interesting changes which I have already described are explained thus. The periosteum which lines the under surface of the roof of the orbit is even in the normal condition very loosely attached to the bone. The proptosis which occurs in the disease in question is caused by a blood extravasation into this easily distended space between the roof of the orbit and its periosteum. The eyeball is pushed downwards and forwards, and the upper lid becomes tense and bulged and sometimes a little discoloured. The swellings on the cranium are due to blood extravasations, especially in connexion with portions of bone previously more vascular than normal owing to pre-existing rickety deposit. Thus far we are on safe ground, and there can be little difference of opinion as to the anatomical conditions found and their relation to the symptoms observed; but when we go a step further, and inquire as to the true nature of this disease and its etiology, there is room for great divergence of opinion. First, as to the question of rickets. The doctrine held by many German authorities that these cases were examples of acute rickets was formulated without adequate post-mortem evidence, and it was obviously unsatisfactory. Clinically, it is true that in the great majority antecedent rickets is shown by beaded ribs, large epiphyses, and delayed teething. Two manifestations of rickets—namely, marked head sweating and laryngismus stridulus—are often present throughout the course of the disease now under consideration. Moreover, after the subsidence of the special group of symptoms which I have described there are in a large number of cases persistent signs of rickets, which run the ordinary, typical, somewhat protracted stages of that malady. In the specimens portrayed there is evidence of a definite amount of rickety change in the spongioid ossification in the epiphysial junction region. But Sir William Jenner, to whom I showed these specimens, told me that in the very large number of cases of rickets investigated by him in years past he had never seen any such condition as the hæmorrhages here present. Nor have I been able to find in any of the pathological accounts of rickets any record of such a condition. But although in these specimens there is a tangible amount of rickets present, yet in some milder cases which have recovered the amount of rickets clinically evident has gone to the vanishing point, and in some cases it has been impossible to say clinically that rickets was present at all. Let us further note that cases of very aggravated and progressive rickets, which are occasionally met with, in which there is excessive bony deformity, with multiple fractures, or with extreme bone softening, do not present, in spite of cachexia during life, the symptoms

which I have described, or post mortem the hæmorrhages here shown. This was a difficulty quite recognised by the German writers, who wrote with inadequate knowledge of the post-mortem conditions, and they drew the distinction between *acute rickets* and *severe rickets*. It is clear that the phenomena of our disease and those of rickets, as commonly understood, though often coexistent, do not present what logical writers describe as concomitant variations.

As to congenital syphilis, in a very few cases an early history compatible with that disease was obtained, but no conclusive sign of active syphilis was noted during the course of the malady in question, nor was any syphilitic lesion found post mortem. The course of the limb affection, even with the pseudo-paralysis and the deep thickening, is quite distinct, clinically and pathologically, from that of any syphilitic bone disease with which we are acquainted. Though in a vague, indeterminate way some of these cases have been reported as infantile rheumatism, study of the descriptions given has shown that the joints proper were not invaded. This negative feature and the freedom from heart affection are adequate practical reasons for dismissing rheumatism as a factor in our disease.

None of the cases, so far as I know, belong to families of "bleeders." Moreover, the general absence of joint involvement shuts out the special limb attacks of hæmophilia. Although it is true that ecchymoses of various kinds occurred, and certain internal hæmorrhages likewise, yet small extravasations were rare, and the protracted course and the special type of limb affection were unlike any case recorded of purpura hæmorrhagica. With what known disease, then, does the group under consideration present most affinities? I submit that it presents most affinities with scurvy. The bone lesions which I have described have been found in scurvy, especially in young adults and adolescents. The special forms of fracture in the neighbourhood of the epiphyses have been described as occurring in young scorbutic subjects as far back as the time of Poupart. The special fractures of ribs, in which the rib proper is separated away from the cartilage, have been repeatedly observed in adult scurvy. The subperiosteal hæmorrhages, again, have been found. They are graphically described by our countryman Lind, whose work on scurvy was the pioneer of modern knowledge of that disease. They have also been described by Budd. In the cases of scurvy which occurred during the siege of Paris several necropsies were made in which blood was found effused under the periosteum of the tibia. Endosteal blood extravasations have also been described, both in the long bones and in the ribs, and a rarefying osteitis, like that which I have mentioned, which doubtless greatly facilitated the proneness to fracture. The predominance of lower limb affection, however explained, is the same in our malady as in adult scurvy.

Passing to other structures, the hæmorrhages and serous exudations into the muscular masses and the consecutive wasting of the muscles are characteristic. Moreover, the scanty internal hæmorrhagic lesions which I have described, as far as they go, agree with what has been found in scurvy. The great pallor and the muddy tint, probably due to reabsorption of altered hæmoglobin, are also common to our disease and to typical scurvy. Finally, with respect to the gums, we may classify the infantile cases into those which have limb symptoms with spongy gums, and those which have limb symptoms without spongy gums, and we have found that the state of spongy gums is practically conditioned by the presence of teeth. If there are several teeth the sponginess is efflorescent, and in the severe cases the fœtor, the bleeding, and the protruding tumours are indistinguishable from what we find in typical scurvy. If there are no teeth there is no sponginess, though there may be found on careful inspection minute ecchymoses. Now the greatest stress has been laid upon the gum condition in adult scurvy; but there is abundant evidence that a toothless man may present the limb weakness, the cachexia, and anæmia, and yet show no sponginess of gum whatever. In mild cases of land scurvy also it is constantly observed that the sponginess is limited strictly to the neighbourhood of those teeth which remain; and if there be large intervals where the teeth have been lost no sponginess appears in those intervals. I may here refer to a series of five cases which have been under my observation at different periods, but which in age were beyond the limit of infancy. In these five cases—children from two to ten years of age—there was undoubted scurvy, produced, I believe, by a curious hysterical antipathy to vegetables and meat. The gum affection was generally more severe than that of the infantile cases above described. The limb affection resembled that of the infant cases, but was less severe. The study of these cases occurring in childhood shows, I believe, a middle term (so far as the symptoms are concerned) between the infantile group and adult scurvy. The inverse relation to which I have referred is reasonable when we consider the physiological differences which exist. Before the eruption of the teeth there is a much smaller aggregate of bloodvessels and blood supply, and much less liability to attrition than at a later period, when every tooth means the presence of a large leash of vessels. The physiological activity of every part of the growing bones of an infant is one of the most striking features of its physical life. This activity is modified apparently in the most rapid and subtle way by changes of general nutrition, and if there has already been induced a condition of rickets, with the alterations in the epiphysial line and in the periosteum which are characteristic of that disease, there is manifestly a prepared soil on which, if an adequate blood alteration is forthcoming, hæmorrhagic lesions can develop. Let me state it in another way. Rickets, *per se*, as I have already said, does not (so far as our experience goes) lead to these hæmorrhages. If it were so, considering how common a disease rickets is, surely these hæmorrhagic cases would be more frequently met with. Scurvy, we know from experience, in adults is adequate to the production of such hæmorrhagic lesions. If, then, in our infantile cases the blood change due to scurvy comes into operation, the rickety change already present may act as a physiological determinant of the sites in which scurvy becomes manifest.

Now let us inquire whether there is anything in the antecedent conditions of these children which brings them into line with those under which adult scurvy arises. What are the conditions under which adult scurvy arises? There are many predisposing circumstances of faulty hygiene, but surely there is a sufficiently conclusive experience that prolonged deprivation of fresh vegetables or their equivalents is the most constant fact amongst the antecedents of the disease. I have said prolonged, because it is clear that the organism has the power of drawing on its reserves for lengthened periods to meet the deprivation of a complete aliment; and I have used the phrase "fresh vegetables or their equivalents" because we now know that fresh uncooked meat and fresh milk are antiscorbutic, as well as, though perhaps not in so rapid a way, fresh vegetables and fresh fruit juices. Looked at as antiscorbutics, probably much larger quantities of fresh, uncooked meat, and fresh milk are needed than fresh vegetables and fresh fruit juices. The chemistry of scurvy is still an unsolved problem—or perhaps I should say an incompletely solved problem—for, thanks to the labours of Garrod, Ralfe, and others, we know that there is a diminished alkalinity of blood, and probably some fault in the presentment of the saline constituents of the food and in the facility with which they part with their bases. But the problem is possibly biological as well as chemical. It seems fair to say that the further we get from a living food the less is the antiscorbutic power. Fresh vegetables are more powerful antiscorbutics than preserved or cooked vegetables. Raw meat is more antiscorbutic than cooked meat, and raw meat juice than beef-tea. I suspect it will ultimately be found that raw, uncooked milk is more antiscorbutic than cooked milk. What is there, then, in common between the antecedents of our infantile patients and those of recognised scurvy? So far as faulty hygiene is concerned, there is little in common. The majority of the infantile cases have been found in healthy homes and amongst good surroundings. Let us turn to the question of food. In the group which I have described, in no single case at the time of onset of the malady has the child been breast-fed. In the great majority, where complete details have been obtained, these infants are found to have been nourished on what may be called "preserved foods." In the front rank come the various proprietary infant foods, prepared by the addition of water to certain powders. Then come the different forms of condensed milk and the proprietary foods made with condensed milk. Then come cases in which, either accompanied by proprietary food or not, fresh milk has been given, but with extreme dilution, during the later stages of infancy. Other categories I will speak of subsequently. Now let it be assumed, for the sake of argument, that such a diet as I have described is a scorbutic diet, and that an infant presenting the symptoms described is at the time being fed on this diet. The obvious test of the reasonableness

of the scorbutic hypothesis is to alter the food in the anti-scorbutic direction and note the results. For the condensed milk let fresh cow's milk be substituted. For extremely diluted cow's milk let undiluted fresh cow's milk be substituted, as, for example, a full pint for a child six months old. Instead of the proprietary food let some sieved potato be mixed with the milk every day, and a tablespoonful of meat juice or gravy likewise. Finally, let a tablespoonful of orange juice or grape juice be administered every day in divided doses, mixed with water as required. And what is the result of these very simple alterations? The result in two or three days is startling. As a rule, the food is taken greedily and without digestive disturbance. The child becomes much more contented, the tenderness of the limbs rapidly diminishes, the sponginess of the gums almost immediately recedes, the pallor becomes notably less, if there has been any renal hæmorrhage it ceases, fresh ecchymoses rarely appear.

It is clear that the progress of the disease is definitely arrested. So far as the local treatment of the limbs is concerned nothing is *essential* but the maintenance of rest in the horizontal position; and this meets another indication—namely, to prevent possible heart failure consequent upon the extreme anæmia and fatty degeneration. Experience has abundantly shown that the blood tonics, such as iron, arsenic, and phosphorus, are useless if the proper change is not made in the diet, and if the proper change is made they are scarcely necessary; although fresh air and sunshine will not prevent the oncoming of the disease, they probably aid recovery when the food change has been effected. It is occasionally found that after the scorbutic need has been satisfied and the cachexia has subsided, the child is no longer able to assimilate the large quantities of vegetable material and fresh undiluted cow's milk which at the beginning of the treatment were taken with avidity and digested. This also is parallel with what has been found in the treatment of adult scurvy. This, Mr. President, completes the recapitulation of the results submitted to the profession in 1883. I now pass to the second part of my lecture, and shall state as concisely as I can how far the former conclusions have been modified by subsequent experience and criticism. First let me mention the experience of others. A considerable number of examples have been recorded both at home and abroad. Dr. Cheadle has reaffirmed his original propositions, with further illustrations and the account of one important necropsy, to which I will subsequently refer. Drs. Gee, Eustace Smith, Goodhart, Railton, Sutherland, Green, and Charpentier have published cases, or series of cases. In Germany series of cases have been recorded with considerable detail by Drs. Rehn of Frankfort and Heubner of Leipsic. The general conclusions previously stated have been strongly supported by these two eminent physicians. The most striking confirmation has come from America.

The first case which appears to have been observed was in 1839, and was reported by Dr. Northrup, physician to the New York Foundling Hospital. In 1891 eleven cases were collected by him, and in February of this year no less than 106 cases were reported to the New York Academy of Medicine by Dr. Louis Starr, Dr. Rotch, Dr. Holt, and others. Detailed histories of thirty-six of these have been analysed by Dr. Northrup. It is obvious from his paper that the clinical and anatomical features described are identical with those of the group under consideration, and the conclusions arrived at are almost word for word those which were stated in 1883. My own experience of this disease since 1883 comprises thirty-three typical examples, besides a number of what may be called "borderland" cases, to which I will presently refer. But after this general enumeration of available material, let me refer to some of the results of the collective experience. First, as to anatomical results. A very striking case was communicated to me by my friend Dr. Stephen Mackenzie. On post-mortem examination extensive subperiosteal and endosteal extravasations and fractures of ribs and lower limb bones were found. But, in addition, there were innumerable small hæmorrhages in the intestines, mesenteric glands, lungs, and the pyramidal structure of the kidneys. Dr. Colcott Fox has published drawings of a remarkable case with extremely widespread subperiosteal hæmorrhages. In the American series, collected by Dr. Northrup, there are four post-mortems recorded. The most important one is Dr. Northrup's case. This was a child of eighteen months of age, with extensive subperiosteal hæmorrhages, but no rickety changes. The case recorded by Dr. Cheadle presented, post mortem, only slight rickets, and the bones and muscles were free from hæmorrhage. Besides the characteristic hæmorrhages into the gums there were extensive extravasations into the lungs and minute extravasations into the intestinal mucous membrane and lymphatic glands. One of the most interesting recent communications is that of Dr. Sutherland, who, whilst laying great stress on the frequency of the limb extravasations, reports a fatal case like Dr. Cheadle's in which the bones were free. Dr. Sutherland has also reported two examples of extensive hæmatoma of the dura mater, which he believes to have been due to infantile scurvy. A similar condition is recorded as occurring in adult scurvy. Since Dr. Sutherland's paper was published I have also had a case of a boy aged fifteen months, who under my observation presented slight scurvy of the gums. From the history I believe it probable that he had had an earlier attack of this disease. At the post-mortem examination an old extensive hæmatoma of the arachnoid cavity was found. This was possibly due to a long past scorbutic hæmorrhage. At the Children's Hospital, Great Ormond-street, since 1883 three post-mortem examinations on cases of scurvy have been made: one under Dr. Cheadle, to which I have already referred; one under Dr. Abercrombie; and one under Dr. Lees presented characters identical with those described in the first part of the lecture. Besides the actual necropsies there is a certain amount of anatomical experience which has been obtained by surgical exploration during the life of the patients. The most striking example of this kind was recorded by Mr. Page, in which prolonged incisions were made down to the bone in both thigh and leg, and great masses of blood-clot were removed. There was recovery, but in addition to the operation an entire change was made by Mr. Page in the diet, and the proprietary food with which it had been fed from three weeks of age up to nine months was replaced by fresh food. In some of Rehn's cases and in some of the American cases simple exploratory incisions have been made, and the existence of blood extravasation under the periosteum has been established. Thus far as to anatomical results. And now as to the clinical addenda to our knowledge. Mr. Holmes Spicer has drawn the attention of ophthalmic surgeons to three examples of the curious eye affection which I have already referred to in the first part of this lecture. After pointing out the association of this special form of orbital hæmorrhage with other scorbutic signs, he suggests, in the case of a hand-fed child aged seven months, that a similar orbital hæmorrhage was the only scorbutic sign. This is a difficult doctrine to accept, but I believe it to be sound. Of seven of my cases in which orbital hæmorrhage occurred, four presented the orbital symptoms before the limb symptoms, and in some of these the limb symptoms were slight, there being great local tenderness, with much irritability, but little swelling.

I have spoken of hæmaturia as one amongst the symptoms of our typical group. Dr. Gee, and subsequently Dr. John Thomson, have pointed out that occasionally hæmaturia may be almost the solitary manifestation of scurvy in infants, and that it may immediately vanish after the employment of fresh food. Sir William Roberts has told me that he has observed examples of this scorbutic hæmaturia without other symptoms, but responding to antiscorbutic diet. I have notes of two cases of hæmaturia in which, though no bone lesions were to be felt other than rickets, there was excessive irritability, resentment to the slightest touch of the lower limbs, and some amount of anæmia. They had been fed on preserved food, and one of them immediately responded to antiscorbutics; the other I have been unable to trace. These cases lead me to mention another example of what may be called a borderland condition. There are cases of rickety infants in whom, though no lesions pointing to scurvy can be detected, the irritability and tenderness are out of all proportion to the signs found. The substitution or increase of what may be called "living food" in the diet will often entirely eliminate this irritability and tenderness, just as in the typical cases which I have already described. I find that Dr. Cheadle and Dr. Eustace Smith have noted a similar experience. Just as we are familiar with a vanishing point of rickets, we may possibly have to recognise a vanishing point of scurvy. The collective experience shows that some of the cases have had an early infancy with much stress and storm in the way of digestive disturbance. The artificial food upon which ultimately they have been nurtured is a sort of survival of the fittest, as being the one attended with least diarrhœa and vomiting;

and it is whilst assimilating this artificial food that the scorbutic symptoms have developed. But I wish to emphasise the statement that in chronological order the symptoms of our disease cannot justly be regarded as the last term of a condition of marasmus.

It is not in the least comparable to the appearance of purpura at the close of a chronic wasting disease. Further, it is recorded that in a great many cases at the onset there is no obvious digestive disturbance, or one only of very moderate degree. Many of the later reports state that the children were well clothed with fat and regarded by the friends as well nourished. The immediate determining cause of the catastrophe is difficult to ascertain. In some of the cases, as in adult scurvy, a slight accident, bruise, or fracture seems to have started the complaint. One of the most suggestive results of the collective experience relates to the social state of the children amongst whom the disease predominantly occurs. The clinical *tout ensemble* of a typical example is as striking in its own way as that of myxœdema or acromegaly. If this were a common disease in our large out-patient departments of the general hospitals and the children's hospitals it would be recognised; but amongst the very poor it is not a common disease. Of the thirty-three typical examples which have come under my care since 1883 only six were hospital cases. The others were the children of well-to-do people, with healthy surroundings and good homes. There was nothing to suggest either wilful neglect or faulty hygiene in any gross sense. We may speak with confidence of what we ourselves observe as to the relative frequency of a disease in different groups of people, but it is somewhat rash to generalise as to the change of type of any disease in different times. Nevertheless, I will hazard the statement that this disease is probably more frequent now than, say, thirty years ago. It is, I think, inconceivable that men of the authority of Jenner and West and Hillier should not have insisted upon it if this group of symptoms had often occurred within the common range of their experience. I observe that Dr. Northrup, in his valuable *résumé* of the American experience, states that it seems probable that the disease is increasing in frequency in America. Is there anything noteworthy of late years about the bringing up of the infants of the well-to-do classes? I think it may be safely stated that besides the increasing difficulty of getting the mothers to suckle their infants there has been an enormous increase in England and America in the employment of proprietary infant foods. The proprietary foods are much more extensively used among the well-to-do than among the poor. But different forms of condensed milk have also come into extensive use, and to a considerable amount among the poor. Is there any reason why the poor, though by no means exempt from the disease in question, should suffer from it in a remarkably less degree than the rich? I believe that an important suggestion, made by Dr. Cheadle, gives a second clue to this remarkable difference. The children of the poor at a much earlier period than those of the well-to-do receive small portions of the same food as that of which their parents partake. No doubt in consequence of such indulgence there are occasional primary digestive disturbances. Nevertheless, some breaks are made in the monotony of the diet, and probably some antiscorbutic article of food is taken. Among the children of the poor potatoes especially are given at a much earlier period than to the children of the well-to-do. Thus, although the children of the poor are *rickety*, they are much less frequently *scorbutic* than the children of the rich.

Thus, to sum up, the children of the poor suffer less from scurvy than the children of the rich, because (1) poor parents cannot afford to buy the proprietary food which the rich parents buy, and because (2) the poor parents, even when they use condensed milk, give their children a mixed diet at a much earlier period than rich people give it.

Are there any addenda to be made to the former results obtained in respect to the diet of the children who were attacked with this disease? I think there are. Permit me to speak first of the results of my own later experience on this point. It still stands out as a striking fact that the proprietary foods are the great offenders, especially those which are prepared with water and with condensed milk, or with a very small amount of cow's milk. Condensed milk is responsible for a fair number. The disease also occurs when very diluted cow's milk is used, and especially when for some reason, after a long employment of considerably diluted milk, the dilution is certainly carried to a further stage, even with or without the substitution of some artificial food. The disease also occurs when peptonised milk has been given over long periods. Several definite examples have been observed in infants to whom for several months as much as one pint and a half and one quart of humanised sterilised milk have been given in the twenty-four hours. By this preparation I mean milk which has been deprived of half its quantity of casein, and which has been subsequently sterilised, and in several cases stored for some weeks. I think there is reason to suspect that the boiling of cow's milk and prolonged sterilisation (especially at high temperatures) lessen in some degree its antiscorbutic quality. In Germany and in America the sterilisation of milk has become much more systematised and extensively adopted than with us. Professor Heubner of Leipsic, in his summary of conclusions in regard to scurvy in infants, speaks with the greatest caution on this point. He is very emphatic against prolonged sterilisation or sterilisation at high temperatures. The same suggestion is embodied in the *résumé* of the American experience to which I have referred. Any extensive employment of the storing of sterilised milk for long periods by dairy companies is, I believe, attended with risk; but when we consider the risks in the dissemination of various diseases by unscalded milk, and the serious primary digestive disturbances that arise in connexion with it, it would be a retrograde step to say a word in discouragement of the routine practice of scalding milk. There is, I think, a way of meeting the difficulty. If I have made my meaning clear it will be abundantly manifest that, as a rule, it is the *prolonged* use of a defective diet which induces the symptoms which we have considered. The early cases of infantile scurvy are very exceptional. The age at which we ought to begin to be on the *qui vive* for the initial symptoms of scurvy is about the eighth month of infantile life. If by that period a moderate quantity of scalded milk has been given (say a pint and a half in the twenty-four hours) then, instead of adding one of the proprietary foods, as is the common practice, we may ward off the occurrence of scurvy by the addition of gravy or meat juice to the milk, but still better by the addition of some carefully sieved potato. The fear of non-assimilation of starch has prejudiced us unduly against the use of living food. Should it be found that potato, cooked and sieved, and given with milk and gravy, is not tolerated (which is a very rare event), we have in small quantities of the juice of fresh fruits a ready method of anticipating scorbutic symptoms. There is still one other point to which I must refer as one of the alleged results of the later experience. I refer to the possibility of scurvy appearing in infants at the breast. At the discussion on infantile scurvy at the Berlin International Medical Congress Dr. Pott stated that he had seen one example of twin children suffer from the disease although breast-fed. No details are given as to whether the mother was scorbutic or as to the total amount of milk taken by the infants, but it is stated that their suckling was impossible on account of the soreness of the mouth. No information is given as to other scorbutic symptoms, and it seems to be an open question whether the stomatitis was really scorbutic. The case scarcely invalidates my original contention. In the *Deutsches Archiv für Klinische Medicin* for 1880 there is the record of an epidemic of scurvy by Dr. Kuhn of Moringen. There are recorded thirteen cases of infants, several of them quite young, being suckled by mothers who were scorbutic at the time. These infants suffered from severe catarrh of the mouth, from bronchitis, and from some skin affections—e g, pemphigus, erythema, and in a few cases petechiæ. Some of them died, but I fail to find any account of post-mortem examination. The details are too meagre to help us in our inquiries. The time at my disposal will not permit me to refer at length to the criticisms which have been offered to the view held by Dr. Cheadle and myself as to the pathology of this disease. They may be summarised under these three headings: (1) that the disease is nothing more than rickets; (2) that the food conditions under which the disease arises are different from those under which undoubted scurvy arises; and (3) that, although the group of symptoms and the pathological appearances present a close resemblance to those of scurvy, these infantile cases cannot be considered as true scurvy, because they do not occur in an epidemic or endemic form. With the first view—that the disease is nothing more than rickets—I have dealt at length in the course of this lecture, and I need not further discuss it. The German physicians, so far as my reading has gone, have relinquished it entirely. With respect to the

second criticism—that the food conditions under which the disease arises are not truly scurvy-producing,—I have given reasons for the opinion that the diet employed does not come under the category of living food, adequate in quality and amount. I have also shown that inadequacy of living food, *plus* a basis of rickets, gives the simplest explanation of the typical case. The immediate result of antiscorbutic treatment seems to be the most conclusive answer to this criticism and in a crude way would seem to be a measure of the proportion of scurvy present in any given case. The third objection—namely, that the scorbutic nature of these cases cannot be accepted because the cases do not occur in epidemics—has been urged recently by Dr. Hoffmann in his work on Constitutional Diseases. In common with many of the German school, Dr. Hoffmann is dominated by the epidemic doctrine of scurvy and by the hypothetical view that the efficient cause of it is some micro-organism. On that hypothetical view I will express no opinion, but English physicians since Lind's time are not dominated by the epidemic doctrine. The many undoubtedly sporadic cases are to them just as significant as, and in some respects more instructive than, those which occur in epidemics. With these examples our cases come into the closest relationship, and a perfect series may be traced from infancy through childhood to adult life in which the differences of symptoms are explainable by the different physiological activity of the tissues specially involved.

An Address

ON

THE DYNAMICS OF LIFE IN RELATION TO THE NATURE OF EPILEPSY.

Delivered before the Manchester Medical Society on Oct. 3rd, 1894.

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(Concluded from p. 1019.)

THE DYNAMICS OF NERVE.

THE nature of nerve force is unknown, but one fact regarding it is certain—it is capable of propagation along a nerve fibre. That which is capable of such propagation must be either a thing moved or a form of motion. It must be motion of a mass along the fibre or motion transmitted in the constituent elements of the fibre. There may be other possibilities, but the alternative seems to me absolute. We know that the nerve energy cannot be motion of a mass, however small; we know that no material atoms can be thus moved along the fibres; and we are compelled, therefore, to assume that it is motion between the elements of the fibre, that it is a form of molecular or atomic motion. This conclusion is one of which the significance is weighty and narrow. Especially important is it in combination with the fact, also conspicuous, which, indeed, it is superfluous to assert, that nerve force is a form of physical energy, and therefore correlated to other forms. This, indeed, involves the conception that nerve force is motion if all physical energy is such, and the question becomes: Can we form any conception of the form of motion that constitutes it? In living tissue we may, conceivably, have other forms of motion than those we meet with in inorganic matter. But we are only justified in assuming the unknown when it is certain that the known is inadequate. Here at least we are not justified in doing so; our knowledge is too vague. We are justified in trying to apply our previous conceptions, but not, I think, at present, in assuming that conceptions are needed that are absolutely new. Nerve force has been thought to be electricity, but one fact recently established, although not recently discovered, seems alone to exclude that conception. It seems to be certain that every axis cylinder of a nerve fibre is composed of a great number of fibrils, each of which is a separate conducting path. They can be seen in their divergence in nerve cells, and without them no mechanism is apparent for the marvellous and minute localisation of the various forms of sensation. If so, however, the conception of the electrical nature of nerve force, as based upon the resemblance of the nerve fibre to an insulated wire, is clearly illusory. There is no such semblance of insulation of the fibrils. We have no knowledge that would permit us to conceive that these continuous nerve fibrils could be separate paths for electricity. The fact that an electrical change, or a release of electricity, occurs during conduction by a nerve fibre, has its significance for the most part destroyed by the similar fact with regard to the muscular fibres. Electricity is liberated when muscles contract, but the energy they manifest is the simplest mechanical form. We may reasonably consider that the electrical change means only that which it does in the muscular fibre—initial escape of some of the released atomic motion in that form. All the facts that we know regarding the production of nerve energy show that it is attended by chemical combination, such as that which attends muscular contraction. Alike in what we have ascertained regarding the action of the brain and the action of the retina, we see evidence of this. No facts are known that are incompatible with it. Until such facts are known, we are justified in the conclusion that the source of all nerve energy is the same form of latent energy that is released in muscular action, differing only in its degree and its relations, according to the difference in the elements with which it is associated. If we find it difficult to trace this, we must remember that the compounds in which the energy is latent, those of which nerve tissues consist, are the most elaborate of all with which we are acquainted. Connected with this is extreme instability—that is, delicacy of equilibrium—and also the capacity for most precise alteration. The latter must be due to the influence of life on nutritional arrangement, to which we shall return; but the instability may be due to the nature of the elements that compose the tissue, and especially to the presence of phosphorus, an element which, as we have noted, has naturally an atomic motion in excess of its restraint. Its presence may make the motion almost equal to the restraint in the living tissue of which it forms part.

Many facts in regard to the mode in which nerve force is excited have an important relation to the hypothesis that its source is latent chemical energy, conceived as minute motion, liberated and released by added motion.[1] But before noting one or two salient facts I must first ask you to realise the fact that all the processes that we are considering must occur with the same precision, irrespective of amount, equally in the least, as in a considerable degree of change. It is certain, yet the conception needs an effort. We are all familiar with the idea of atoms, but we are not equally familiar with the thought that all the processes in which atoms take part must go on in the same degree of balanced action whatever their number, and that the processes of energy connected with these must be equally precise. Every access of motion that we call a "stimulus" is definite in amount, however small it seems according to our estimate of size, and its effect is equally definite. But remember that the force which turns a balance may be most minute compared with that of which the equilibrium is thus destroyed: the balance of an ounce in each scale may be turned by a grain. The amount of nerve energy needed to liberate muscular energy equal to a foot-pound may not be enough to move a grain through an inch. That which excites the nerve energy may have a proportional minuteness. Think for a moment of the processes of energy which take place, which must take place, whatever their actual nature may be, when the lightest touch of a hair upon the skin of the leg acts on the brain and is perceived. The energy of the touch of the hair is a stimulus to the nerve structures at the spot which subserve the sense of touch. In the elements of the nerve ending, there is such delicate equilibrium between the motion of the atoms and their restraining attraction, that the motion of the hair, added to that already present, releases atoms and releases their motion. This, definitely related in amount to the energy of the touch, passes, with absolute precision, by a fixed path to the brain. During its swift transit it is maintained unchanged in amount, however small. If you consider the actual dynamical amount

[1] The conception of a stimulus as added motion needs some modification of its simplicity. The effect depends largely on momentum—that is, the amount of energy in a given time. But to introduce this question here is not practicable nor, I believe, is it necessary for the object in view.

of energy concerned in the gentle contact of a hair, and of the processes that are produced by it in the nervous system and are proportioned to it, you will see, I think, that it is no exaggeration to state that we must bring our conceptions of amount of energy, and of its absolute precision irrespective of amount, down to the minuteness of our conception of atoms. Remember, as some aid to this attenuation of idea, the opinion held by the highest authorities of the size of atoms. Conceive, under the microscope, the section of one fibril of the axis cylinder of a nerve fibre. We have in it the smallest point which can be definitely perceived with the strongest available magnification. If we conceive a length of the fibril equal to its diameter, we have in that at least one million atoms, and perhaps twice as many. This will give us as a minimum one thousand atoms on the surface of every section—i.e., in every atomic layer—to subserve conduction. Allowing for the arrangement of the atoms in molecules, we have room for processes such as we conceive adequate and complex, and that may be even considerable if we regard them from what may be called the lowest standpoint of dynamical perception.

The problem of the nature of nerve force is essentially connected with that of its conduction. Two facts regarding nerve fibres seem specially significant. First, the fibres that conduct are continuous with the structures in which the nerve impulses arise, and we can trace no demarcation or essential difference between them. It is not in the cells, but beyond them, in the structure formed by the ramifying processes, that we have to look for the production of the energy. To this fact, most important for us, I will recur in a moment. Secondly, nerve fibres are excitable, as is the grey matter from which they proceed. The stimuli—electricity, &c.—that can stimulate the producing structures in which the conducted energy arises, can also stimulate the structures which convey it. Everyone is familiar with the fact that electricity, applied to a nerve, causes muscular contraction, as does an impulse from the brain. Nerve energy may be generated in the fibres as in the grey matter. We conceive that it arises by chemical action, as does the energy manifested by muscles—by the release of the energy latent in the molecules. There is a release of atoms and of the motion connected with them, by means of the added motion of what we call a "stimulus." But the nerve force seems to be less readily produced in the nerve fibres than in the grey matter. These facts point to the conclusion that the function of the generating and conducting structures differs only in degree, that the process of conduction is of the same nature as that of production, and that chemical action underlies both.

Does it seem strange that conduction so rapid as we know that of nerve force to be should be a result of chemical action? Think of the rapidity with which a train of nitro-glycerine, or even gunpowder, will explode, and the chief part of the difficulty will disappear. Remember, also, that we have, in the passage of contraction along a muscular fibre, from the place at which it is excited, a transmission of a similar process, and almost as rapid. We thus conceive that the transmission of nerve energy is the conduction of released motion by means of propagated chemical action along the molecules of the fibrils. These molecules are in sufficient contiguity, or continuity, to permit the rapid transmission of the process, while, close together as the fibrils are, there is no such relation between the molecules of adjacent fibrils as can permit the passage of the chemical action from one to the other.

I have said that nerve force has been thought to be electricity, but that the opinion is untenable. We believe, however, that electricity is transmitted motion, and that nerve force is the same. The conclusion that they are not identical is thus rendered, at least in aspect, less important. The motion transmitted as electricity has been thought to be of a certain character, but the transmitted motion of nerve energy is too complex in its conditions for us to feel that we can discern enough to permit more than a general conception. Beyond the fact that it must be transmitted motion, we cannot yet go. If we knew how it is transmitted we should know more about it, but its nature and conduction are, as I have said, so connected that we cannot expect to learn much of one from the other; our conceptions of both must grow together. In thinking of conduction we are on uncertain ground because vital structure may involve capacities of the transmission of motion unlike that which we know of elsewhere. Holding fast that which we know (know as highly probable), expecting to meet with the like, we should yet be prepared to meet with that which is quite unfamiliar. In such structures as nerve tissue there may be relations between the complex molecules specially favourable to the passage of released energy, not yet known to us. It is, I think, at least conceivable that the conduction of the nerve force takes place by chemical action, and yet by less chemical action than that needed for its liberation. Remember how the motion of a mass may be facilitated by the motion of wheels or rollers. Remember, too, the remarkable fact of the storage of electricity in batteries. In these, electricity is stored by a chemical process, like that by which it may be generated. Far less is needed to keep it than to produce it, and yet some chemical action is needed. Why this should be is doubtless well known, but does not concern us now, because the fact is relevant only as an illustration. It suggests the question, May there not be a similar analogy between the processes of production and conduction of nerve force? A thorough knowledge of electrical physics might possibly suggest more close analogies, but Life involves conditions too special to make purely physical analogies more than suggestive. If conduction is by transmitted chemical action, the marvel is great that the nerve energy should be maintained in absolute precision through the molecules, inconceivable in number, that must conduct it. Yet the precision is as perfect, the molecules are as many, and the mystery remains, whatever conception we may form, or if we contemplate the bare facts in simple wonder, with folded hands and with uplifted eyes.

Not less significant than conduction is excitation—that is, the processes by which nerve energy comes to be as we perceive it. If we think of nerve force as minute motion, and as due to the release of the latent chemical energy that is also motion, it is instructive to note that the stimuli which, from the exterior, act upon the nerve structures and lead to this production of nerve energy are almost all distinctly of the nature of motion. "Massive" motion stimulates the nerves of touch. The rapid wave-motion of heat affects the nerves that subserve thermic sensibility; the still more rapid motion of light acts upon the retina, and the far slower motion of sound upon the nerves of the ear. Violent motion in some nerve structures causes pain. In all the structures, nerve energy may be excited by the motion of electricity. The nerves of smell and taste are stimulated by chemical processes which may seem an apparent exception to the law; but here, on consideration, we seem to have only an instance of the released motion of chemical energy acting in a special—indeed, a peculiarly instructive—way. I must leave this, however, to your own thought, and I may safely do so, if I am not too presumptuous in assuming that you have so far followed me along the path, seen dimly in the misty morning air before the dawn. In passing, we should note how remarkable it seems that the wave motion of heat and that of light, which differ only in rapidity and may be changed from one to the other, should affect exclusively structures which apparently differ so entirely as those of the skin and those of the retina. Yet the difference can be only in degree, elaborated to an apparent absoluteness in the retina. This is suggested to us by the fact that, in the red rays of the spectrum, we actually feel light by the skin and see heat by the eye. The names are due to the differences in our conscious sensations, but, as a matter of fact, when the red part of the spectrum, falling on the skin, causes a sense of heat, and on the retina, a sense of light, the undulations that cause the two effects are the same. In skin and retina alike there is nerve tissue in which the latent motion is so related to that of the stimulus as to be readily released by it. On any theory the structures, apparently so much alike, which subserve sensibility to heat and to touch must possess such a difference as to enable the one to respond to minute but rapid undulations, and the other only to the relatively coarse motion of a mass, large or small. It is hardly conceivable, I think, that this difference in excitability should not be due to a difference, either in minute molecular arrangement, or in the atoms that constitute the molecules.

If this is so, if special susceptibility to massive motion or to the minute motion of heat, implies such difference, and these structures are continuous with the fibrils that conduct, and their function differs only in degree, another question presents itself. Is it not probable that there may be corresponding differences in the conducting fibrils and variations in the energy conducted? The experiments by which the actual identity in nature of nerves of different function has been supposed to be established,

do not seem to me incompatible with the difference I indicate. An energetic impulse may be conducted by any nerve, and yet a slight one may pass only by a special fibre. We have as yet, probably, only a glimpse of the variety in the forms of motion that seem to us the same, especially in their relation to life. In light and heat, indeed, we have noted the constancy with which a slight variation entails a different effect. But we seem to perceive a contrast where there is only a slight difference. We should learn from this to avoid transferring our perceptions to our conceptions. Perhaps more relevant is the difference between red and blue light in the effect on us, and the susceptibility of different structures revealed. I can only suggest this point for you to think over. Such difference in susceptibility must mean difference in constitution. The pre-existing motion of the latent energy must be in a form specially related to that which it receives as a stimulus and by which it is augmented. If so, as I have hinted, may there not be a difference in the result? May not there be specific differences in nerve energy? We cannot yet say, but the question is not therefore a useless one.

When a "nerve impulse" reaches a centre it acts as a "stimulus" in the same way as the energy by which it was excited. The motion of the nerve impulse disturbs by its addition the preceding equilibrium, and increases the motion in the structures that receive it, so that in them it exceeds the attraction, and there is proportioned release of atoms and of energy; but the energy released is, in general, much greater than the energy of the impulse which excited it. The process may go on in the centre. The atomic motion that is released passes in the same way by other fibrils to other parts of the centre, near or distant, and thence, it may be after many repetitions of the process, it passes to the muscles, or to other structures.

In this process it is most important to note certain facts histologists have lately ascertained; but before doing so there is a question that must have occurred to you while listening to what I have just said—the contrast between the processes of activity in muscle and nerve. The theory advanced brings the contrast into prominence. The attempt to apply it reveals the difference between the two processes, both of which we must conceive as the release of atoms and of energy. I think, indeed, that the result illustrates the service of theory, whether right or wrong, in enabling us, and indeed compelling us, to scrutinise phenomena and their relations more closely. We conceive in nerve, as in muscle, a release of atoms by added motion, but we conceive that this occurs far more readily in nerve because the attraction is in less excess of the motion which it restrains. We must conceive, moreover, that atoms pass away in one case as in the other. Yet there is no change in the shape of the nerve structures coincident with the escape—there is no compelled correspondence in direction of the motion released. On the contrary, the effect passes from molecule to molecule of the nerve, just as it does in the muscular fibre in the process by which the stimulus to one part becomes a stimulus to the whole fibre. We know how swiftly the contraction spreads along the muscle; we know how perfectly proportioned it is throughout to the initial degree, and to that of the stimulus which excites it. It is to this element alone in muscular action that nerve action seems to correspond. It is a change that passes from molecule to molecule in uniform degree. We may indeed say that throughout its course it is of the nature of a propagated stimulus, although itself due to the stimulation of a slighter and different form of energy. It acts on the centre as a stimulus and gives rise to a like process. In noting this we must remember that the conception of a "stimulus" is simply that of a process which causes another process greater in degree. It has nothing to do with the nature of the process. Moreover, in the nervous system the amount of energy in each part of the process must be, in general, far less disproportionate than in the case of the nerve energy that excites muscular contraction. Moreover, the processes are homogeneous, if this term may be transferred to our subject. Throughout the nervous system, from the sensory periphery, on which external energy acts, to the motor periphery, where, through the muscles, the outer world is acted on, and other forms of energy are released, all the processes vary only in place and in degree, and not in dynamical character. Yet there must be, often, a difference in the dynamical degree. The preceding readiness for action of the centre—in common language, its preceding instability—may cause a slight impulse to have a great effect. When the sole is touched the trifling amount of nerve energy, which the motion of the touch excites, develops enough within the centre to cause the related muscles to generate several foot-pounds of energy. But this involves a question to which I will return.

In comparing or contrasting the process in nerve and muscle we perceive the difference just spoken of—that in the nerve it corresponds to stimulation rather than to the effect of the stimulation. With this difference we must associate the difference of structure. In the nerve tissues, where the impulses originate, we have no elements comparable to those of muscular tissue. The fact is most important. Its importance is, moreover, increased by the latest knowledge we have obtained by the remarkable result of microscopic investigation. These have changed much of our thought, changed it in a most important manner, and to the dislocation produced we are not yet accustomed. We used to think that the nerve cells, whence nerve fibres proceed, not only govern their nutrition, but are the sources of the nerve impulses which traverse the fibres that arise from them. The researches I refer to have compelled us to alter these conceptions. I say "they have compelled us" because we seem to have no choice but to accept them. They extricate from the tangled skein (or that which seems so) which nature has woven for us in nerve phenomena threads of fact and evidence so strong that they draw us to a new point of view, draw us with a cogency so consistent and so concordant with much we before relied on, that against it there can be no resistance. We can no longer think of nerve cells as the sources of nerve energy, as parts of a divided "nerve battery" whence nerve fibres conduct the force produced. They are the vital elements in the machine, but they have nothing to do with its dynamics. Into the protoplasm of the cell pass the fibrils which conduct nerve energy; through it they course unbroken; from it they pass, contiguous, as elements of the axis cylinder of a nerve fibre. From the cell-body, in each direction, protoplasmic material extends along the fibrils, and about them, too trifling in its attenuation to be visible, but potent, however minute in amount, with the absolute power of Life. On the preservation of this structural integrity depends the life of the nerve fibrils. As far as they extend in molecular continuity, their nutritional integrity is maintained by the mysterious influence of the cell. This depends, in some way, on the presence of its nucleus, around which the protoplasm is collected, but this fact it is alike beside our need and beyond our power even to scrutinise. For us the chief fact is that the vital influence exists, and that it depends on structural continuity and is irrespective of the nerve impulses and of their direction. We must, therefore, dismiss the idea, which hitherto has seemed helpful to us, that nerve fibres commonly degenerate in the direction in which they conduct. Indeed, our grasp of the conception has never been free from a sense of insecurity, because we have always been confronted with a conspicuous anomaly—the degeneration of the sensory nerves in the opposite direction to that in which they conduct. In them nerve impulses and nutritional influence are opposed. The truth we now perceive to be that we have only been able to observe the relation where the length of fibre is considerable. Where fibres are short (as in the "ramifying processes") it cannot be perceived, and the instances in which the relation is perceptible in long fibres are chiefly those in which the two influences correspond in direction. We cannot doubt that, could we observe equally the effects in all cases, we should find them uniformly opposed to the idea that there is any correspondence, and that therefore we have no evidence that there is any essential identity between function and nutrition.

I think we shall be best able to perceive the significance of these researches, so ably presented and extended in the recent Croonian Lecture of Professor Ramon y Cajal, if we fix our attention on what we may now regard as the nerve units, the fibrils of the axis cylinder. I have already had to speak of them. It may be objected that they are indistinguishable in the seemingly homogeneous axis cylinder, and, indeed, their existence is not easy to reconcile with its general character. But we must remember the facts I have just referred to, the divergence of the fibrils in the cell, discovered by Max Schultze, their continuity through it, and, moreover, the profound significance of the so-called division of the axis cylinder. As a division of a homogeneous body we cannot understand this. We can do so if it is a separation of conducting paths, which again diverge at the cell. Moreover—and this I would especially ask you to note,—if

conduction is, as I have suggested, the passage of motion by a chemical process from molecule to molecule, we need only a serial relation of molecules in intimate relation. If there is no such relation between the contiguous series of molecules, if the molecules of adjacent fibrils have no such relation as those of each fibril possess, we need no separation, such as we can call "structural," to constitute distinct conducting paths. The fact of the nutritional and not functional influence of the cell involves, of necessity, the recognition of the fact that the spongy grey substance is the source of the nerve impulses. The fact is of the highest importance alike for our conceptions of normal and for those of disordered function. It is in this mysterious structure, so intricate as to have baffled all attempts to unravel it, that we must seek for the source of nerve energy. One general fact has, indeed, been ascertained regarding it, and this is of great significance. It is that the branching processes of the nerve cells *terminate* within it; they end, and are not continuous with other fibrils. Their endings should, indeed, be thought of as beginnings. The fibrils begin in this with merely a slight thickening, a slight increase of the nerve substance, but they present no union with other structures. This fact is significant for us, because we see its harmony with the other evidence that there is only a difference in degree between the structures that conduct and those in which nerve energy arises. Those in which it arises have a slightly greater amount of material, and that is all the conspicuous difference. The fact also reveals the correspondence in general features between the central structures in which nerve impulses begin and those at the periphery. In the skin they arise at enlarged extremities of the sensory fibrils. In the centre they arise at enlarged extremities of the fibrils that form the branching processes.

This perception at once brings before us a great difficulty. In the centre, the nerve impulses arise as a result of excitation by other nerve impulses which reach these structures. We have seen that the nerve impulse acts as a stimulus, and that the process is repeated in the central structure. But the path of action is precise, unvarying. Can this be possible without continuity? I am not sure, however, that it is proper to ask *what can be* if we can ascertain *what is*. As far as we can judge, we must accept the fact of discontinuity of structure and continuity of function. If we do so frankly, looking at it as a fact, we may find an unexpected reward. There must be definite action of the passage of energy from the fibril that ends in the centre to one that begins there. A nerve impulse in the one causes a nerve impulse in the other, and yet the fibrils are not continuous. Contiguous, however, they must be. What have we, however, in the nerve endings on the muscular fibres? There, also, we seem to have no molecular continuity between the nerve and muscle tissue. In each case the energy must pass, but cannot pass by the process of its conduction; this involves, of necessity, molecular continuity. But we can conceive that it passes as simple motion, and as the nerve impulse must be a form of motion we can conceive that as simple motion it may end. The stimulation of the nerves at the periphery is, as we have seen, by simple motion. As it began, so it may end. Thus the "solution of continuity" becomes, though still a marvel, yet a help in our attempt to see that which may be.

It may have occurred to you, gentlemen, that in what I have said there has been nothing which strictly belongs to the subject as indicated by the title. I have spoken of the dynamical processes which occur under the influence of life, but nothing about the dynamics of life itself. If you anticipate that I shall come to this I cannot but disappoint you. I have, indeed, to point out one relation of life to the processes we have been considering; but of the relation of energy to life itself there is, it seems to me, nothing to be said. Nothing is to be discerned. Not only is the relation of energy to vitality entirely hidden from us now, but I can see no promise that the future may have it in store for us, for the hand that holds it is closed tightly. By "the relation of energy to life" I mean the relation of physical energy to the influence which determines the building up of tissues and the production of the living elements of the complex animal frame. Take as a type of the process, paramount in importance, the process of cell formation. We may see in the process something of chemical change, and an influence by which latent energy is specially directed to certain ends, but of how far and even whether physical energy enters into life itself we have no perception. I may best illustrate the fact by pointing out what seems to me an important instance. We have no evidence that any one element that is produced in the body, that any form of cell or similar organism, needs more energy for its production than another. We have no evidence that more or less energy is needed for the production of a blood-corpuscle in the spleen or the marrow of bone, or of a mucous corpuscle in the lining membrane of the nose, than for the production of one of the separate living bodies by the union of which the individual is ultimately reproduced. Indeed, we have no real proof that any energy is needed. You will at once perceive the importance of this fact, if it be a fact, for brushing away certain misconceptions as harmful as they are groundless. The term "vital energy," which echoes round us in tones to which we would fain close our ears, is a term which describes a conception that, so far as it is possible to discern, has absolutely no counterpart in fact corresponding to its common meaning. Beyond the physical energy of the processes of the body we know nothing of anything to be designated by the name, and, although in the mysterious influence that governs nutrition we may see some semblance of that which we call "energy," we cannot yet see whether it is a mere reflection or a reality, or both. This difficulty, however, brings us face to face with the limit of our efforts.

THE DYNAMICS OF DISEASE.

"Hitherto shalt thou come, but no further." How often, in how many places, does the warning make us pause. We seem to hear the words when our thought is suddenly arrested by facts which we cannot overcome by energy or evade by skill. We have been dealing with that which is within the influence of life; we have had to perceive, in passing, how much there is in life that is more than the processes it controls, and this confronts us now. Disease brings us before the problem of life, not perhaps with more distinctness, but in more obtrusive form than do the phenomena of normal action. It brings us into the presence of a mystery, inscrutable as the symbol framed of old on the Egyptian plain by men who felt that which we feel, and who saw perhaps as much as we can see with distinct vision. Does not the grand symbol of that which looks but cannot see, with wistful eyes directed above the level of our earth, and yet not much above it—does not this hold in its rugged outlines and imperishable mass, a story that is true?

We turn in conclusion to some aspects of energy in disease. We take, as I intimated at the beginning, the abnormal process in the nervous system that is presented by epilepsy, an extreme and obtrusive manifestation of energy by the animal body. Our difficulties in applying the conceptions of latent energy to the normal phenomena of nervous and muscular action are not likely to be less in the case of abnormal phenomena. Yet, if the conceptions assist us in the one, they should also do so in the other, in spite of the greater difficulty. Here, moreover, we must be prepared for the fact that conscious ignorance is the most certain effect of knowledge, for the result is sure in a region hitherto almost untraversed, even by the speculative pioneer. We have been accustomed to describe the phenomena of disturbed function of the brain in words which are hardly more than a concise epitome of that which we observe, and we have not been quite free from a delusion that, in doing so, we are describing the nature of the processes. We speak, for instance, of "discharge" and "instability" in reference to the deranged action of the nerve centres; but it is evident, on consideration, that the terms are in no sense a statement of the nature of the processes. If we attempt to form any conception of the causes of the phenomena we perceive we shall inevitably be met by essential difficulties. The facts we see must have causes; they must depend upon definite processes in the minute constituents of the nerve elements. If we succeed in discerning anything of their nature, or even in forming a reasonable conjecture regarding it, if we can throw any light upon the actual process that takes place, it is certain that one effect will be to show that spaces of darkness intervene between the points we seem to light up, and to suggest that in the dark recesses may be that which would change the relations, if not the aspect, of that which we can discern. Realised ignorance always impresses more than even definite knowledge; the latter soon becomes familiar, but how much of the unknown and the important the former holds we cannot guess. Yet this effect upon us should not deter from the attempt to see, and if the light is faint and sight is dim we must at least gain more than by closed eyes.

I have said that we can only define epilepsy as sudden action of the nerve centres without apparent stimulation—that is, the stimulation, if present, is too slight to be discerned. In the terms of the theory I am advancing, we should say that in the structures concerned the minute motion is more nearly equal to the restraining force than it is in health, so that an amount of added motion, slighter than is needed under normal conditions, permits the liberation of atoms and of energy. We may even conceive that the motion may gradually become equal to the amount of restraint, and then exceed it by mere accumulation, so that the balance is disturbed and energy is liberated without any more added motion than the slow nutritional accretion—that is, without a stimulus. Such a condition might result from a very minute general change in the composition of the nerve tissue concerned, perhaps even from an abnormal relation of the molecules, or their constituent submolecules or "radicals." It is indeed the current conception that the undue readiness of action called "instability" is the result of abnormal chemical constitution. If such a condition exists widely, we can understand the manner in which the "discharge" spreads in the brain. Such an extension, even with extreme rapidity, is indeed a normal phenomenon; the released energy excites the release of atoms and of nerve energy in all connected and related structures, alike in those that are adjacent and in those that are remote. Just as the released energy of motion in the part of a muscular fibre first excited, is a stimulus to the parts adjacent, so it is in the brain to the parts connected, near or distant. In the nerve centres the conducting fibres enable the stimulating influence of the released motion to act on distant molecules as if they were near. In that case there is a transmission of the stimulus, a mediate and not immediate influence, but the result is apparently the same in character and in degree. It is only another instance of the fact which we have already considered, that the length of the fibrils is unimportant for their function. When action is thus multiplied, the effect of even a minute difference in the constitution of the nerve tissue may obviously be very great. It must be especially effective in a material, such as the nerve substance, in which the latent energy—that is, the minute motion—must be always close to the limit of the restraining attraction. We are compelled by many facts of diverse character to perceive that every change in chemical composition entails a change in function. It is not easy to avoid the conception that all persistent changes in function depend on a change in chemical constitution. Facts that illustrate the former statement abound on all sides. The persistent presence of arsenic in the system causes at last visible change in the nerve endings. This is the extreme result of a process which must be, in its beginning, one of chemical constitution. Long before the stage of visible change there is deranged function in the sensory nerves due to the presence of the arsenic, essentially a chemical effect. So with many other poisons. Indeed, it is only thus that we can understand the effects of strychnine, of curare, belladonna, or other substances which by chemical composition affect the function of certain nerve structures and do not affect others. The cause we assume to be chemical differences in the agent, but for the effect there must be chemical differences in the nature of the atoms, or their arrangement, in that on which the agent acts.

The disordered action of the nerve centres in epilepsy sometimes presents more obtrusively than any normal action the opposite effect which the same influence may exert when in different degree; indeed, the same process may have opposite effects, as it is slight or considerable. The process of discharge may be manifested by an arrest of action or by over-action, according to its degree. In the visual centre, for instance, the commencing process may cause sudden darkness, and then, as it increases, bright stars may be seen. The same process may thus stop all influence on the higher centre of those impulses which should reach it from the retina—i.e., loss of sight; as it increases it may cause a liberation of energy to the higher centre with which conscious sensation is associated. Here we have the two apparently opposite effects as the result of the same process, in the same centre. We may have a like effect in related centres. One feature of "local epilepsy," as it is termed, familiar to all who have studied the disease, is that a sensory aura may commence—e.g., in the fingers, pass up the arm and down the side to the leg—purely sensory in character. As it proceeds down the arm this becomes almost powerless. The discharge in the sensory structures which affect consciousness, "inhibits" the related motor centres and arrests their activity. Yet a similar more energetic discharge may be accompanied by spasm. I need not remind you of analogous phenomena in the range of normal action. You all know that, while a touch upon the sole may cause a vigorous movement of the leg, a prick may prevent a touch from having any influence. No attempt has, I think, been made even to guess at the nature of this mysterious process of "inhibition."

At first sight it may seem that the theory we are considering increases the difficulty of framing any conception. But we have reason to believe that there must be inter-atomic motion, and that it is the liberation of the atoms that is the chief means of releasing the energy of motion they hold. We have some reason also to believe that there must be such a thing as inter-molecular motion, since molecules may escape. Further, we have noted that complex molecules are conceived to be formed by the union of groups of atoms, submolecules (or "radicals"), and the compounds which result from muscular action give countenance to the belief that the submolecules may be separated and released. This conception of molecules and submolecules involves that of their constituent atoms being united by attraction stronger than that which unites them to the atoms of other molecules, or else the existence of such molecules would be impossible. Unless we are all wrong, the groups of atoms must exist as such; they must be held together by attraction which keeps the atoms from joining those of other submolecules. The groups are held together as such in the molecule; but this conception involves that of energy keeping the groups separate as well as of an attraction keeping the atoms of each group together, and likewise, of course, the submolecules together in the molecule. This energy we cannot separate from our conception of motion. Inter-molecular motion is involved in the escape of molecules; inter-atomic motion in that of atoms; intra-molecular motion, that between the submolecules, is involved in the conception of their existence and of their escape. I am sorry to put it so tersely, but I fear expansion would not increase lucidity, for words have a strong tendency to cause opacity if they are numerous. If there is motion between the molecules, and also between the submolecules, an increase in either seat will tend to resist the escape of the atoms, will tend to restrain and prevent the liberation of the energy they hold. Since it is the release of atomic motion that is the chief source of manifested energy, an increase of that between the groups of atoms will hinder the release of energy. It will prevent a stimulus having its normal effect. Indeed, the added motion may conceivably pass chiefly between the groups of atoms, if it is excessive or under certain conditions. It would then have purely a restraining effect. Does not this afford us a glimpse into a possible conception of inhibition? If we realise the undoubted fact that motions so different as those which I mentioned in an earlier part of this address may coexist among the same atoms, and may maintain their separate existence with absolute distinction and constancy in degree, we shall, I think, be less inclined to shrink from the conception which I have just described. The arrangement of the constituents of vital tissues may reasonably be supposed to permit the coexistence of forms of motion in some respects closely allied, and yet in fixed relation alike of coexistence and of interchange. I hesitated to complicate my illustration by the mention of interchange, but I must drive home the marvel by reminding you that all light absorbed which does not cause separation of atoms is simply slowed into heat, and that this process may take place in atoms in which there are other forms of motion at the same time. I think a sounding or tuning fork, through which electricity is passing, with a dull black surface on which light falls, should be a hammer to shatter any hesitation in admitting the truth of a dynamical conception merely because of its complexity. Of course, all that its blow can do is to make the mental way a clear one.

To return to our special subject, all that we know shows that the release of energy in nervous and muscular tissues is associated with the release of atoms; increased motion between the molecules must tend to hinder the release of the atoms of which they consist, and we can thus conceive conditions that may constitute the mechanism of what we call inhibition, and also of what we are accustomed to speak of as "resistance." I have referred to the extremely complex structure that has been discovered in what before was

thought to be a simple uniform protoplasmic substance. The discoveries regarding many cells suggest that all organic tissues of definite function possess also a structure of complex and definite character, which may determine, in ways of which we have as yet no perception, the direction and character of the minute motion between their atoms, and of the effect of that which reaches them. Moreover, it must be remembered that if this seems complex almost beyond credibility, it is not likely that any conception of the nature of these processes can be offered which does not present the like repellent aspect. We are accustomed to talk of the action of nerve centres, of their "inhibition," of "lines of resistance," of "increased resistance" and "lessened resistance," of the effects of over-action and the like. In speaking thus of these processes we seem to be describing their nature. In reality, as I have said, we are doing scarcely more than repeating in terms of a different character a description of the phenomena we observe. We fancy that we are explaining when we are merely translating words. I do not know that any attempt has yet been made to pass beneath the surface and to frame any theory of the actual processes on which the observed phenomena depend. But I feel sure that, whatever be the nature of any hypothesis that can be framed, it must be at least as complex as that which I have suggested, at least as unfamiliar, and must seem as strange. The processes that underlie such phenomena we can trace, or seem to trace, in dim outline as processes of energy in the domain of life; but this malady, as a disease, brings us to the point where that which we can trace is limited by that of which we can only see the influence. It confronts us with the influence of life itself, of which the nature is beyond our comprehension; conspicuous enough it is, but quite impenetrable to our discernment. The essential feature of the malady as a disease—that is, as a recurring process—is the fact of its recurrence. This involves the renewal of capacity for action which we have already noted in observing the features of muscular activity, but it brings before us, also, the fact that there is not only renewal of capacity, but increase of tendency. It is this which makes epilepsy a disease; it is by this that action causes overgrowth. However minute may be the excess of that which replaces over that which passes away, the excess is certain, both of matter and the motion it bears. Not only does the renewal so perfectly correspond to the loss as to make long-continued repetition of the action possible, but it must in some way involve an increased disposition for the like release of motion under the same stimulus, so that the process is more readily produced. This is the secret of all education and training, and of the physical basis of memory. It is the secret also of functional disturbance as a self-perpetuating disease. Epilepsy is a disease because the tendency to what we call "discharge" is increased each time the tendency has its effect. This renewal of material and of energy, and this increase, in both are the result of the vital power of nutrition. The marvellous ability of the living structure to appropriate to itself, from the organic compounds which come into relation with it, those that exactly correspond to the elements which it has lost, to appropriate them, moreover, in increased amount, is the effect of that vital influence which first builds up the structures, which maintains them, and renews them until a term approaches—when it fails. In youth so strong, in age so feeble, this power of renewal in each alike has disease in its capacity. Perverted energy in early life is thus augmented, defective nutrition in later life is increased in its imperfection. We must not, however, follow further this line of thought. The thread of vital influence might be traced through many an intricacy; but we should thereby be no more able than before to unravel the warp and woof of the strange web, or even to discern distinctly the pattern they have woven on it.

And so, gentlemen, in mystery we begin—and end. Was it not Coleridge who said: "In wonder all knowledge begins, in wonder it ends, and admiration fills up the interspace"? Not altogether true nor everywhere, and yet who is there that does not feel that an earnest effort to perceive that which is unseen leaves him on a higher level, and if at his old standpoint he has a better view. Whether the effort I have made to-night can be thus described or not, I feel that it leaves us more conscious of the mystery that includes so much, and seems essentially impenetrable—the mystery that holds the secret of our being. Search as we may, with eyes however earnest and however aided, that which we call "life" eludes our search and resists our efforts. We may, indeed, trace the relations of matter and of the energy it bears—their entrance into the domain of life, their exit, their effects. We see them dimly shadowed now and then within the luminous mist, but the mist obscures our sight, and the light it radiates hides by its own brightness. We must be content with what knowledge we can gain, secure or insecure, and, while using it as best we may, should realise, in all humility, how much there is we cannot know, and yet we cannot doubt.

ON STATE INSPECTION OF CREAMERY DAIRIES.

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IN THE LANCET of April 21st, 1894, I drew attention to the dissemination of infectious diseases by our creameries and made some suggestions as to the means by which this might be avoided. Further personal observations, as well as information supplied by others, have convinced me of the reality of the danger I then pointed out, and have conclusively proved the uselessness of any protecting measures which fall short of those then recommended—viz., firstly, thorough and frequent dairy inspection by competent and independent inspectors or "sanitary policemen"; and, secondly, compulsory notification of all cases of illness occurring in dairies which send milk to creameries. I cannot add anything essential or new to what was contained in the article referred to, but a few cases may be worth recording, as they afford practical proofs of the necessity for, and value of, the regulations previously suggested.

CASE 1.—Mr. A—— received milk from a creamery the supply of which became implicated through a dairy where typhoid fever had broken out. At no time was the separated milk drunk by any of the occupants of the house, yet Mrs. A—— and the man who drove the milk car to and from the creamery contracted typhoid fever. Other sources of infection were absolutely excluded, and it was evident that the separated milk was the means by which the disease was brought to the household. Pigs and cattle were fed with the separated milk, and the persons who handled it took food subsequently without thorough cleansing of the hands. Some of the vessels used in pouring out the milk were also employed in other ways.

Such cases prove that there is danger to the occupants of a farm from the contaminated milk-supply of a creamery, even though the separated milk be not used as an article of human diet. When an albuminous liquid such as milk at blood heat receives a quantity of typhoid bacilli, and is then carted, perhaps for hours, under a hot sun, these microbes must increase enormously, for all the conditions—temperature, proteid medium, absence of sunlight, &c.—encourage their multiplication, so that each farmer eventually receives gallons of a fluid teeming with disease germs that cannot fail to be a source of danger to everyone who handles either it or the vessels in which it is kept. It is also evident that by boiling merely the portion of milk intended for human consumption all possibility of infection is not removed; nothing short of the boiling of the whole quantity of the separated milk and the scalding of all vessels in which it was contained can effectually remove the danger.

CASE 2.—Typhoid fever broke out in the household of Mr. B—— in December, 1893. Shortly afterwards I attended at a house about one mile distant, where milk from Mr. B——'s farm had been received. There were seven persons living in this house, and as they knew of the presence of fever in the dairy some of them refused to use the milk, but others took it. All the former, four in number, escaped, while the three who drank the milk contracted typhoid fever. On the appearance of the disease in Mr. B——'s dairy his establishment became short-handed, and the milk was then actually sent to a neighbouring creamery, as this entailed less trouble.

The necessity of compulsory notification of every illness occurring in dairies which supply the public or send their milk to creameries is strongly shown by this case. Such a law is not universal at present, and Mr. B—— was able to supply the public and send his milk to a creamery, although the danger of infection thereby was proved by the cases in the neighbouring house where the milk was used. Mr. Stafford, Local Government Board medical inspector, in a

series of most useful recommendations made by him to the Tralee sanitary board in connexion with the fever epidemic in Castleisland, complained that medical practitioners granted certificates of freedom from infection to dairy people in whose houses infectious diseases had quite recently been prevalent. He thought that "some interval, whether a week or ten days or a fortnight, should elapse between the removal of the patient and the supplying of milk to the creamery." To ask for such an interval is not an arbitrary proceeding, and the demand is based on many valid reasons. Not only does it give an opportunity for more effectually destroying all contagion by repeated disinfections, fumigations, and cleansings, but, further, it allows time for the development of fresh cases which may have been in the incubation stage at the time of the removal of the first patient. The latent stage of typhoid fever is liable to considerable variation, but medical authorities give it as most commonly about a fortnight, and though it probably is often extended to a much longer period I think a certificate of freedom from infection may be granted fourteen days after the removal of the patient, provided that the other members of the household be then free from suspicious symptoms. During this fortnight most thorough disinfection of the dairy, vessels, houses, and even bedding, which may have been soiled, should be performed.

CASE 3.—The milk-supply of a creamery situated in Sanitary District No. 1 having become contaminated, typhoid fever was conveyed by it to the family of Mr. C——, who lived in Sanitary District No. 2. A servant in Mr. C——'s employment also sickened and went to her father's house in a third sanitary district, at a distance of about ten miles, and five of her family contracted the disease. Subsequently another of Mr. C——'s servants fell ill and was treated on his master's farm, but still Mr. C——'s milk-supply to the creamery was not stopped.

Here is seen the great difficulty a medical man often meets with when he is seeking the starting-point of an infectious outbreak. The practitioner who treated Mr. C——'s servant after her removal to Sanitary District No. 3 had no suspicion that her illness was directly contracted from the creamery in Sanitary District No. 1, six miles from Mr. C——'s residence, seeing that she came direct from Sanitary District No. 2, ten miles from the house where this medical man first saw her. Different rural districts are now brought into relation in a manner hitherto unknown, and as their medical officers of health may have no communication with each other it is evident that badly conducted dairies do a much larger amount of mischief through creameries than practitioners or the public are aware of. I know of nothing that would have been more calculated to protect the milk-supply of the creamery referred to than the Infectious Disease (Notification) Act; by it the possibility of spreading infection would have been reduced to a minimum.

The public in many places are partly protected by legislation which regulates the sale of milk direct to the customers. These regulations are embodied in the Contagious Diseases (Animals) Act and in others, but none of them have been universally adopted, nor is it probable that they will be for a considerable time, as the various local sanitary authorities have the option of putting them in force or not. For many years the press, lay as well as medical, has rendered valuable service in educating the public by pointing out the dangers of impure milk, yet the non-adoption of these Acts in many places is to be accounted for by the perilous unconcern with which infection is still viewed in rural parts. The complete absence of inspection that is enjoyed by many vendors of milk at present cannot be generally known. In a recent article Professor J. P. Sheldon says: "Every farmer who wishes to sell milk to the public is required to take out a licence which is based on a certificate from the sanitary inspector, who has satisfied himself that the premises are clean, and that the water-supply is pure and ample. There can be no doubt that this is a wholesome regulation." No thoughtful person can dissent from the latter comment, yet it is to be regretted that in numerous places the sale of milk goes on without any such restrictions, and everywhere the creamery supply appears to be left uninfluenced, though the public require as much protection from impure milk when it goes to the factory as when it is intended for the retailer. One reason for the latter statement I have already referred to[1]—viz., that the milk coming from an infected farm is sent back as separated milk to as many dairies as deal with the creamery, and each of these is thus rendered liable to an outbreak of disease, and, as a dairy distributing milk, to become in its turn a most active centre of infection. All these infected dairies continue to supply the creamery, and the produce of the latter thus becomes contaminated from an increased number of infected sources. Again, a few dairymen send only a portion of their milk to the factory, the remainder being retailed direct to their own customers—an arrangement which spreads the epidemic among households having no direct communication with a creamery. Case 2 is an example of this mode of propagation, and others have come under my notice. It has been urged by Professor Long that the sale of separated milk should be entirely prohibited, as one form of milk adulteration would be thereby suppressed. He has had experience which justifies him in stating that some unscrupulous dealers mix it with whole milk, thus making a double profit. Though starting from a different standpoint, my experience led me to a similar conclusion. Mr. D—— was in the habit of buying separated milk ostensibly for the purpose of feeding pigs. Milk from his own cows he retailed, and the contamination of the creamery milk was followed by fever among Mr. D——'s customers. Whether there was intentional adulteration or only accidental tainting in this case, it affords an additional reason for protecting the public by adequate inspection of creamery dairies.

While the old system of butter-making was in use I did not see an epidemic of typhoid fever among the farming class. When that disease then appeared in a dairy—not retailing milk—it sometimes spread more or less through the inmates, but never in my practice to neighbouring farms. This fact is explained by the complete independence of the water-supply on most of the farms in my district, the formation of the land effectually protecting the wells from pollution by sewage from adjoining farms. However, the first case of typhoid fever seen by me after the local introduction of creameries was followed by an epidemic widely spread among the surrounding dairies. It is believed by many that the Contagious Diseases (Animals) Act, the Infectious Disease (Notification) Act, and the Infectious Disease (Prevention) Act are quite sufficient to meet the dangers called into existence by the creamery system. The general adoption of all these Acts would undoubtedly be a much needed and most useful advance on our present unprotected state, but, as already mentioned, there is no likelihood of more than their partial adoption, nor do I believe that, unassisted by further enactments, they would be able to effectually cope with the requirements of this modern development of dairy farming. The Infectious Disease (Notification) Act only affects the district that adopts it; consequently farmers who live in adjoining districts,[2] where the Act is not in force, need not notify the presence of disease occurring in their families even while they send milk into the former district—an objection which is fatal to the efficient working of this Act, as many dairymen supply creameries that are in sanitary districts far removed from the farms which yield the milk. Where the Infectious Disease (Prevention) Act is in force, if "the medical officer of health is in possession of evidence that any person in the district is suffering from infectious disease attributable to milk supplied within the district from any dairy situated within or without the district," he can, if authorised by an order from a justice, inspect such dairy and get the animals therein inspected by a qualified veterinary surgeon. He shall then report to the local authority, who "may thereupon give notice to the dairyman to appear before them within such time—not less than twenty-four hours—as may be specified in the notice." After his appearance the local authority "may make an order to stop the sale of this milk *within the district*." The slowness of the legal machinery certainly gives ample opportunity for the spread of disease previously to the stopping of the sale of the contaminated milk, and where the Act is not already in force six weeks at least must pass from the date of special notice before the section mentioned shall extend to the district. Furthermore, there is no provision made for simultaneously preventing the sale of the infected milk in neighbouring districts, which may still be sent to creameries situated elsewhere. Instead of these cumbrous proceedings ready and direct means are required for checking infection the

[1] THE LANCET, April 21st, 1894.

[2] If an epidemic breaks out in a district in which this Act is not in force, and the local authority then desire to adopt it, six weeks at least must elapse between the date of notice convening the necessary meeting of the sanitary authority and the date on which the Act shall come into operation.

moment it is discovered or even suspected. Section 34 of the Contagious Diseases (Animals) Act provides for the registration and inspection of dairies, cowsheds, and milk-shops, and is a necessary and useful Order; but its adoption is not obligatory, and consequently it has been only a partial success. I know of more than one local sanitary authority that refused to appoint an inspector under this section, though they were asked to do so by the Local Government Board immediately after their respective districts had been widely visited by typhoid fever, the result of infected separated milk.[3]

In July, 1894, the Limerick bench of magistrates held that the Food and Drugs Act did not apply to milk sold to creameries, and they therefore dismissed a summons against a man for such adulteration. In a recent outbreak of fever in the Carrick-on-Suir union Dr. Moran reported that on the appearance of the disease on a certain farm the cows were transferred to an adjoining one, where the milking was carried on by the inmates of the infected house, and the milk after this exposure to infection was sold to the same creamery that the farmer had been previously prohibited from supplying. These are not examples of mere failure of administration of our present laws, but they are proofs of the necessity of fresh legislation required by a system the dangers accompanying which were not fully known when our recent Acts were framed. To render our existing laws at all efficient they should be extended to every part of the United Kingdom, and not confined to those districts whose sanitary authorities are sufficiently enlightened to adopt them; but, in order to grapple with the matter thoroughly, rules such as are enforced by the continental creameries should be made compulsory, and should be carried out under State supervision. I know that all necessary regulations are rigidly followed in many of our dairies and creameries, but in others they are completely ignored, and they will continue to be so until the State compels their adoption. Disease can also be conveyed by the cream, and an outbreak of scarlet fever at South Kensington was thus accounted for. Professor Lane Notter traced several cases of typhoid fever to the use of cream procured at a dairy where this disease had broken out, and Dr. Thorne Thorne saw cases of typhoid fever and of diphtheria that were caused by cream from infected milk. He explained the implication of the cream as "merely the mechanical effect of the oil globules in rising taking with them the germs to the surface." Perhaps equal danger does not exist with cream obtained by the separator, as the tendency would be to have the heavier bacteria driven forcibly from the centre where the lighter cream collects.

The discoveries of Professor Bang of Denmark, and of Mr. Beebe of the New York Health Department, threaten to considerably widen the interest of the whole question, and to make the demand for reform imperative. It was formerly thought that cheese and butter could not convey disease germs, but Professor Bang exploded this gratifying belief when he proved that both these products of the dairy are capable of deriving living and active tubercle bacilli from the milk. Since then there has been an uneasy suspicion that other disease germs may also find a suitable home in the same articles of diet, but in the absence of positive proof these fears seldom found expression. Now, however, Mr. Beebe has demonstrated that over 3000 lb. of cheese contained the Klebs-Löffler bacillus, and on investigation it was found that a fatal case of diphtheria had occurred in the family that supplied milk to the factory in which the cheese was made. Many creameries make an inferior cheese from separated milk, but the more important question is, Can this germ, or the bacillus of typhoid fever, find its way from the milk into the butter? At present there is no proof that such can occur, but, reasoning from analogy, the conclusions cannot be reassuring. It is now known that the diphtheria bacillus can so pass in cheese-making; the heat used in this manufacture is not capable of destroying the germ, and one cannot point to any process in the making of butter that is calculated to do so, as the acid developed in the ripening of cream is not fatal to the typhoid bacillus. Butter contains about 16 per cent. of water, which is derived from the milk, and it must have been by means of this that the tubercle bacilli discovered in butter by Professor Bang were conveyed, and undoubtedly there is some danger, no matter how small, of other pathogenic germs passing over in a similar way, though, for the reasons mentioned just now, it is probable that, other things being equal, the presence of disease germs in butter is less to be feared when the cream from which it was made has been separated by the centrifugal machine; the weakness of our modern method of butter-making does not lie in the process of manufacture, but in the mixing together of the products of all sorts of dairies which are frequently under no supervision whatever.

In conclusion, it is undeniable that many diseases have been conveyed by milk which was either procured from infected animals or was subsequently contaminated by the addition of impure water &c.; that both cheese and butter have derived the tubercle bacillus from milk; that cheese has in the same way become impregnated with the diphtheria bacillus; and that several pathogenic germs, once they get into butter, can live there for considerable periods, cholera bacilli having been found in it thirty-two days after they were purposely introduced, typhoid bacilli after three weeks, and tubercle bacilli nearly three months later. To follow butter obtained from a suspicious source and to conclusively prove that harm results from its use is a task surrounded with almost insuperable difficulties, and mere negative results in such an important question cannot be considered as final. It is not in a spirit hostile to an important industry that I direct attention to these matters, but to impress on the State the necessity of adopting measures similar to those which are in force in the most flourishing agricultural countries of the Continent. In Germany a dairyman who sends adulterated milk to a creamery renders himself liable to a fine of 3*s.* for every quart of milk delivered. In Denmark, if milk be sent from a house in which infectious disease exists, a fine of £5 is inflicted on the delinquent; creamery dairies are regularly seen by an inspector; and "veterinary surgeons visit the farms once a fortnight, when every case of disease among the cattle is isolated." Our own agriculturists would be benefited by the universal adoption of such rules, but the public health has even higher and more urgent claims. In the words of Professor Crookshank, "the health of the community must take a first place; the happiness and prosperity of our country and the preservation of our imperial supremacy largely depend upon keeping our invisible foes in check and maintaining the highest possible standard of public health." But in spite of all our boasted advance in sanitary science these foes still come in what should only give us life and strength, for "there is death in the pot," and it has been my endeavour to expose one unguarded channel by which it gains entrance.

Postscript.—The cases in the houses of Mr. B—— and Mr. C—— did not come under the notice of the medical officers of health for their respective districts, and, the Infectious Disease (Notification) Act not being in force, no official information was supplied by occupiers or medical attendants.

Bandon, Ireland.

[3] In the late outbreak in Castleisland, which was "clearly traced to infected milk," there were between 800 and 900 cases of typhoid fever; yet on its termination the sanitary authority refused to appoint a dairy inspector.

THYROID ADENOMA AND CYSTIC ACCESSORY THYROID; REMOVAL.

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AND
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THE growth occurred in a patient aged twenty-seven years. When quite a little girl her parents noticed a small, freely movable lump under the skin of the left side of the neck, just above the collar-bone. The swelling was painless and "grew with her." In her twentieth year she consulted Mr. Whitehead of Manchester, who examined the neck and told her it consisted of enlarged glands and not to worry about it; he recommended the local application of tincture of iodine. The only inconvenience the growth caused, according to her statement, was an occasional feeling of choking when she lay down in bed. She is a married woman and has one child. Four and a half years ago another enlargement appeared higher up in the neck on the same side, near Adam's apple, but the original swelling appears to have remained quiescent about this period, only to increase recently, which caused her to consult

Mr. W. H. Wright of Walton, by whom she was seen in January of this year. She was a well-developed, although somewhat anæmic, bright little woman, who considered the condition lightly, having, as she expressed it, become "used to it." Occupying the lower half of the posterior triangle of the neck was a large swelling about the size of a man's fist, nodulated and soft in places, extending well under the sterno-mastoid, but lying entirely to the outer side of the line of the carotid artery. (Fig. 1.) It was freely movable and could be forced downwards behind the clavicle. At its upper part was a second rounded portion attached to this larger mass, about the size of a hen's egg, and giving one the impression of an enlarged gland attached to an aggregation of similar structures. Distinctly separated from these was a somewhat smaller growth in front of the sterno-mastoid, bulging by the side of the upper margin of the thyroid cartilage, and which appeared to be anchored deeply. The thyroid gland appeared to be normal and totally unconnected with the growths. The most likely diagnosis appeared to be that of tuberculous

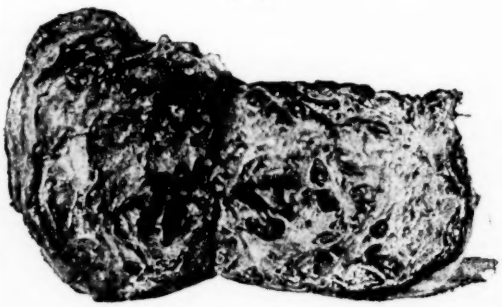
FIG. 1.

glands, and removal was decided upon. A fact in the family history seemed to confirm this; an aunt had succumbed to "consumption of the glands of the neck," which had been discharging for years.

An ⌋-shaped incision was made down the middle of the posterior triangle and along the upper border of the clavicle, going towards the sternum. The growth was readily exposed; it was covered by a plexiform arrangement of very large veins, such as one meets with over large goitres. This made us pause and reconsider the diagnosis. The slightest injury to the veins caused serious hæmorrhage, so that removal was commenced from above by carefully shelling out the more isolated lump which was encapsuled. A section of this was made and revealed a dark-brown cystic growth with calcareous nodules in the stroma. It was now clear that we had to deal with a cystic accessory thyroid. The larger growth was rapidly removed after clamping and ligaturing the large veins, was found to lie in the angle formed by the subclavian and internal jugular veins, and had no discoverable connexion with the normal thyroid. An incision an inch and a half long was next made over the portion in front of the sterno-mastoid; the same venous environment was found, and in endeavouring to detach the lump from the deeper tissues a tail-like piece of normal thyroid tissue was drawn out and removed with it. The wounds were sutured, and a dry dressing of wood-wool (sublimated) tissue was applied under a firm dressing. The wound healed by first intention.

Pathology.—Portions 1, 2, and 3 (in the order removed) were examined. They all displayed the same appearance—that of a cystic growth; the cysts were filled with brownish fluid, the intercystic material being fibrous tissue with here and there calcareous plates. (Fig. 2.) The cyst lining consisted of

FIG. 2.



small cubical cells; in the tiniest cysts the interior was filled with colloid material, leaving no doubt as to the thyroid origin of the growth, so that we were forced to the conclusion that No. 3 was an adenoma of the normal thyroid; but, as regards Nos. 1 and 2, their position, and appearance during childhood, we think, warrant us in considering them as true cystic accessory thyroids, probably developed from some erratic shoot out of the pharynx, near to, but apparently quite distinct from, the normal lateral lobe of the thyroid gland.

Liverpool.

AUDITORY VERTIGO CAUSED BY WORKING IN COMPRESSED AIR.

BY JOHN CURNOW, M.D., F.R.C.P. LOND.,
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A MAN aged twenty-seven years was admitted into the Seamen's Hospital on Oct. 19th last. There was nothing of importance in the family history. The patient had had no serious illness since the age of nine years. He had worked a good deal on the railroad, but of late years a good deal of his time had been spent underground in the excavation of tunnels, in some of which compressed air was used. When fifteen years old he worked in the Severn tunnel for two months, the last month of which he was working in compressed air. He had driven a pony in a coal-pit for three months. He had worked in the Dorn and Chindley tunnel in Derbyshire for nearly eighteen months. During the construction of the Stockwell tunnel beneath the Thames the patient worked for eight months. He worked in the Blackwall tunnel from February to Whitsuntide of this year, and then again he had been engaged there for ten weeks before admission to the Seamen's Hospital. In none of these subterranean workings had the patient felt any ill-effects; in fact, he had always enjoyed excellent health. He had finished his eight hour shift on Saturday, Oct. 19th, and had walked on his way home nearly three miles, when just outside the hospital he felt ill. He became faint quite suddenly, and would have fallen had he not clung to the railings and been supported by his mates. He experienced a sudden noise in his left ear and felt quite deaf; his previous hearing had always been good. He also felt very giddy, and all neighbouring objects appeared to be revolving round him. He had a slight aching pain in his knees. He had no epistaxis, although he says this is common among the workers in the tunnel. When admitted to hospital the patient was a well-nourished man with no signs of gross organic disease in the heart, lungs, or abdominal viscera. He was in a very collapsed condition, with great pallor and a cold sweat over the forehead. The pulse was 66, the temperature 96° F., and the respiration was hurried. He was in a tremulous condition and unable to

stand. He complained of intense giddiness, which was not influenced by position and was experienced when sitting down and when lying in bed, all the surrounding objects appearing to revolve round him. He had loud booming noises in his ears, particularly in the left; these were uninfluenced by inflation of the sympanum. He vomited repeatedly when the attack came on, and the sickness lasted until after his first night in hospital. There was well-marked nystagmus, horizontal in direction, especially when the eyes were directed to the right. There was a small amount of vertical oscillation in both eyes. The hearing was much impaired on the left side, a loud-ticking watch being only faintly heard on contact with the mastoid. When the watch was placed on the forehead or between the teeth it was always better heard on the right than the left side. Both tympanic membranes were seen to be quite healthy, and there was no accumulation of cerumen in the meatus. On examination of the eyes no oculo-motor paralysis could be detected. The pupils reacted well to light and accommodation (the nystagmus mentioned above). Both discs were clear; there were no signs of retinal hæmorrhage—in fact, nothing abnormal save a small amount of pigmentation. Taste and smell were not affected; there was no headache. The reflexes were normal, and the knee-jerks were brisk on admission, but they soon became normal. There was no tenderness in the muscles or loss of power; the gait was uncertain and hesitating; no spastic or ataxic signs were observed. When walking the patient evinced a tendency to reel and fall. This tendency to fall was always to the right, and became more marked on turning round to the right. With the eyes closed he stood alone, but was unsteady. There were no signs of visceral disease. When in the hospital the patient's general condition improved as the effects of the shock passed off; but his vertigo, nystagmus, tinnitus, and deafness have not materially diminished. He is still unable to walk any distance without reeling and having support. For the detailed notes of the above case I am indebted to Dr. Windsor, house physician to the Seamen's Hospital.

This case is of peculiar interest as being the first of its kind, so far as I am aware, that has been noticed among those working in compressed air. The mischief here is evidently in the internal ear (labyrinth), and, considering the suddenness of its onset and its persistence, the most probable explanation of its cause is a hæmorrhage from the vessels distributed to the semicircular canals. It is now more than three weeks since the occurrence of symptoms, and the man still suffers from all the manifestations of acute Ménière's disease (auditory vertigo), although they are much less pronounced than when he was admitted to the hospital. I take his condition to be due to the mechanical result of the difference between the ordinary pressure of the air and that under which he was working (two atmospheres and a half), and as showing the necessity of some gradual means for allowing the one to pass into the other. An air chamber in which the pressure can be gradually reduced has now been constructed, but it is used only for workmen who complain of discomfort. In addition to circulatory and respiratory troubles, working in compressed air leads to special nervous affections. Severe pains in the limbs along the course of the nerve trunks are very common, and occasionally definite cases of paraplegia are met with. The oxidation of tissues under compressed air must be very rapid, and the products of combustion cannot be quickly got out of the system. Stasis in the veins thus overloaded with carbonic dioxide and other waste products must therefore occur, and to this disturbance of the circulation I would attribute the causation of these cases of temporary paralysis. There can be no gross organic lesion, for the patients invariably recover, although somewhat slowly, and they must be placed in a different category from that narrated above.

Wimpole-street, W.

NOTE ON THE DYSPEPSIA OF PHTHISICAL PATIENTS.

BY V. D. HARRIS, M.D., F.R.C.P. LOND.,

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IT will readily be admitted that not a few of the symptoms from which phthisical patients suffer may be traced to disorders of digestion. As a matter of common observation, indeed, it may be stated that it is unusual for any case of phthisis to escape entirely from intercurrent attacks of dyspepsia. Sometimes the dyspepsia occurs at the very commencement of the tuberculous infection of the lung, and occasionally may even appear to precede the establishment of the tuberculous lesion, or at any rate to precede the establishment of a lesion sufficiently large to give definite physical signs in the chest. Not uncommonly at this period, at all events, the symptoms of dyspepsia altogether throw into the background those of the actual disease. As the disease progresses, signs of weak and insufficient digestion become more and more the rule, so that in the later stages they are seldom absent and are often exceedingly troublesome. Such being the case, it is obvious that the treatment of disorders of digestion in cases of phthisis becomes one of the most important duties of the practitioner in the conduct of the affection. Anything tending to throw light upon the causes of the imperfect digestion of the phthisical may have the effect of making the treatment more successful, because more rational. From a consideration of the general tendency of the wasting diseases it would appear probable that, together with the shrivelling of the other tissues, there would be a corresponding wasting of the glands of the body. If the glands waste, the product of their metabolism would be diminished; and so, in the case of the glands secreting the digestive ferments, the daily output of these ferments would be diminished also. Such a diminution would be quite sufficient, one would imagine, to account for imperfect digestion. I propose to show that experiment confirms this *a priori* reasoning. Of the factors which go to make up good digestion the digestive ferments must form one of the most important. Of the truth of this anyone who has seen the simple laboratory experiments demonstrating ferment action will be easily convinced. Say, for example, the experiments with the proteolytic ferments—pepsin in an acid, papain in a neutral, and trypsin in an alkaline medium, any one of which will digest fibrin or similar proteid material with ease and celerity; whereas the action of acid in dissolving the substance is slow and laborious. Or, again, take the diastasic ferments of the digestive tract—ptyalin of the saliva and amylopsin of the pancreatic fluid: their action is likewise quick and easy in converting starch into sugar through several intermediate stages. Or the rennet ferment of the gastric juice and the similar ferment of the pancreas: their action in curdling milk is markedly rapid and complete, the soluble caseinogen being almost instantaneously converted into the comparatively insoluble curd or casein. Less is known about the lipolytic ferment of the pancreatic juice; but this, at all events, is proved, that in fresh and healthy pancreatic juice there exists a ferment which quickly splits up fat as a preliminary to saponification. In fact, in each case the ferment action is much easier and more complete than simple or purely chemical action of acids, alkalies, and the like. There is every reason to believe that these ferment actions are constantly going on during life, and anything interfering with their usual range—such as diminution in the amount of the ferments themselves—would of necessity have an injurious effect. Certain investigations of my own, with the valuable help of Dr. Gow and Mr. Crace-Calvert already reported,[1] into the ferment actions of the pancreas under different conditions have convinced me of the fact that the amount of these ferments to be obtained by extraction from the gland post mortem varies considerably, and that in many wasting diseases the amount is distinctly diminished. This was certainly the case in chronic phthisis, although one was unable to make out any relation between the diminution of the ferments and the amount of the disease in the lung. Neither was there any constancy in the amount of diminution, it was marked in about 50 per cent. of the cases examined. In one case the diastasic power of the pancreatic extract, estimated according to the method suggested by Sir William Roberts,[2] amounted to (in terms of dry starch) 0·02, or about one-third of the power of a pancreatic extract made from the gland of a patient who had died suddenly when in good general health. In another case the tryptic ferment was inappreciable, whilst the other ferments were present in very small amount, and in a third case it was noted that all of the ferments were present only in slight traces. It is not necessary to give the details of these experiments here. It is, however, important to remark that the extracts were always compared weight for weight of the glands, and that no allowance was made for the shrinkage of the gland, sometimes sufficiently evident to the unaided eye, but nearly always demonstrable by the aid of the scales. For example,

[1] St. Bartholomew's Hospital Reports, vol. xxix., 1893, p. 125 et seq., and the Journal of Physiology, vol. xiii., No. 6, p. 169 et seq.

[2] Digestion and Diet, p. 76 et seq. Smith, Elder, and Co., 1891.

in one case of chronic phthisis the gland when cleared of connective tissue &c. weighed only forty-nine grammes, the patient having been an adult male aged twenty-six years, whilst the pancreas of a child aged thirteen years, who had died from fever, weighed under similar conditions ninety grammes. So, then, the ferments to be extracted from the pancreas after death from a wasting disease such as chronic phthisis having been found in a considerable proportion of cases to be deficient, it is not unreasonable to assume that these ferments in the pancreatic juice during life are also sometimes much less than they should be normally. So much for the pancreas. With reference to the gastric ferments, as this subject has been recently investigated by Dr. Soltau Fenwick,[3] I have made no independent observations, but, judging from the fibrotic changes which have been demonstrated by him and by others to exist in the mucous membrane of the stomach in this disease, it would not be an unfair inference to draw that the gastric ferments in phthisis are sometimes deficient as well as those of the pancreas. Lastly, as regards the ferment activity of the saliva in phthisis, the investigator has of course a better opportunity of judging, as the fluid may be conveniently tested and its power of converting starch into sugar may be easily tried.

With the object of ascertaining the amount of ptyalin present in the saliva in cases of phthisis I commenced a series of experiments in my out-patient room at the Hospital for Diseases of the Chest, Victoria Park, last autumn. In no case did it appear that the diastasic power was entirely absent, although it evidently varied in different cases. A more systematic investigation of the in-patients was afterwards undertaken, with the able assistance of Mr. John Hussey of St. Bartholomew's Hospital, for which I am greatly indebted, with the following result: fifty cases were examined—the details of the experiments are not necessary. In all of the cases it was found that the diastasic ferment was present, but the amount of the ferment, as judged from the rapidity and completeness of the action, was evidently a varying quantity. A quantitative estimation was therefore made in fifteen cases, according to the method of Sir W. Roberts[4] already alluded to, and the diastasic value in terms of dry starch was noted. First of all the diastasic value of the saliva of two healthy and robust male adults was found for purposes of comparison. This proved to correspond fairly with the number given by Professor Gamgee.[5] It was found to be (in terms of dry starch) 0·12, or more conveniently, in terms of the starch solution, equal to 12 or nearly so. Of fifteen cases examined quantitatively about one-half showed normal, or nearly normal, activity; in three there was a sensible diminution; whereas in four the activity was about 2, or about one-sixth of the normal. It thus seems probable that in phthisis the saliva may sometimes have little use in digestion, since the diastasic ferment is occasionally markedly deficient. It may be mentioned, in passing, that microscopic examination of the salivary glands and pancreas in cases of chronic phthisis has shown me that in a certain proportion the glands are affected with marked fibrosis, quite sufficient to account for the diminution of their functional activity. I hope to record the researches I have made upon this subject.

From the preceding observations, then, it seems not unreasonable to consider that the dyspepsia of the phthisical is not infrequently due to a diminution of the digestive ferments, and further to draw from this a lesson in the treatment of the disorder. As regards the latter, it appears to suggest that the food of the phthisical should consist of materials that have been thoroughly cooked, and thereby made more digestible, or of those which have been in part at any rate subjected to artificial digestion, and that the food should be administered in small amounts to give the diminished ferments more chance of doing their work well. Whether it is expedient to stimulate the more or less diseased glands to extra secretion by the administration of acids or alkalies may be considered doubtful, but at any rate digestive ferments may be added to the drugs which are administered in the disease, if dyspepsia does not yield to other kinds of treatment. I have satisfied myself by experiments that malt extract contains a powerful diastasic ferment in addition to the maltose or malt sugar, of which it is chiefly made up. It may be that this ferment is of use in the dyspepsia of phthisis, and, if this is the case, the somewhat enigmatical qualities of malt extract in the disease might be explained. This substance certainly appears to be sometimes beneficial, and it can scarcely be believed that this is due to its maltose, a sugar little different from sucrose or the ordinary sweetening sugar of everyday life. The value of pepsin and papain in the treatment of digestive troubles in chronic diseases is well known; but of the use of pancreatic ferments in such affections I have been debarred, because of the fear that such materials when administered by the mouth are rendered inert by the action of the gastric juice in their passage through the stomach. Of the ingenious method of giving these ferments in capsules, made of a material which is not dissolved by the gastric juice, but is soluble in the pancreatic secretion, I have had no opportunity of judging.

Wimpole-street, W.

[3] The Dyspepsia of Phthisis, p. 15 et seq. Lewis, 1894.
[4] Loc. cit.
[5] Physiological Chemistry, vol. ii., 1893.

A CASE OF DIPHTHERIA TREATED WITH ANTITOXIN; DEATH FROM CARDIAC FAILURE.

BY R. LESLIE ROMER, M.R.C.S. ENG., L.R.C.P. LOND.

ON Oct. 22nd I saw a well-nourished boy aged thirteen years who had been vomiting during the night and complained of a sore-throat. The temperature was 105° F. and the pulse was good (92); there was some tenderness of the right submaxillary gland, and the tongue was coated. On examining the throat there was a suspicious-looking membrane on the right tonsil. He also complained of a feeling of "stuffiness" about the nose, but this was thought to be due to chronic nasal catarrh, from which he had suffered for some time and for which he had used the usual nasal spray, biborate of soda, &c. The throat was ordered to be painted with an iron and glycerine paint; a gargle of potash and a mixture of iron and chlorate of potash were administered, and port wine was prescribed. On Oct. 23rd the left tonsil was affected, the vomiting had stopped, and the tongue was cleaner; the pulse was 92, the temperature 101·4°, and the respiration 18. The right tonsil was cleaner, and the urine contained albumen. The following day the membrane on the left tonsil was increasing and the left gland was much swollen, the right being nearly clear; the temperature was 100·2° and the pulse 84. The tongue was cleaner. On the 25th, as the membrane on the throat did not clear, the patient was put on bichloride of mercury treatment (half a grain in twenty-four hours), and a throat spray of saturated solution of boracic acid was used. On the 27th two large pieces of membrane came from the nose. The membrane had spread on to the uvula. The boy seemed better. The throat was painted with paraffin. The next day the temperature was 101° and the pulse 92, dicrotic. The patient looked slightly dusky. By the 30th the membrane had spread rapidly; it had now appeared on the pharynx and had apparently extended to the trachea. There were coughing and huskiness of the voice. The pulse was 91, the respiration 28, and the temperature 101·8°. The next day the breathing was bad; the voice was suppressed. The boy had a loud brassy cough, which caused him to vomit. The pulse was 104, dicrotic, and the temperature 103·4°. I now resolved to use antitoxin. I was able to procure only eleven drops of antitoxin. Six minims of this were injected with an ordinary syringe at 6.5 P.M. on Oct. 31st, the pulse then being 104 and the respiration 28. The temperature immediately began to fall; at 7 P.M. it was 102·8°, at 9 P.M. 101·6°, and at 6 A.M. next morning 100 2°. On Nov. 1st the pulse was 108, the respiration 28, and the temperature falling. The cough was much less. The patient had passed a good night. There was less stridor and the throat was clear of membrane, but much injected. At 5 20 P.M. five minims of antitoxin were injected. The patient breathed quietly through the nose. The pulse was 100 and the temperature 101°. The next day the temperature was still high, and there was no apparent change since the night of Nov. 1st. The pulse was 108 The cough was less, but he had been retching through the night. Ice and soda water were given. At 5.30 P.M, after much trouble, I procured a small bottle of antitoxin (Schering's), and immediately injected fifteen minims. The pulse was 120 and dicrotic. He complained of much pain in the ears when swallowing. His throat for the last two days had been sprayed with perchloride of mercury and the nose with boracic acid. The temperature was 101·6° and the respiration quiet;

there was no stridor. The note on Nov. 3rd was: "The patient has passed a good night, taking better, but the temperature has remained high." There was no apparent change since injecting on the previous night, but some food regurgitated through the nostril. At 10 A.M. he became suddenly cyanosed, with a running pulse of 140. Fresh antitoxin was injected, but in spite of injections of ether, brandy, digitalin, and strychnine at varying intervals during the day he sank and died at 6.10 P.M.

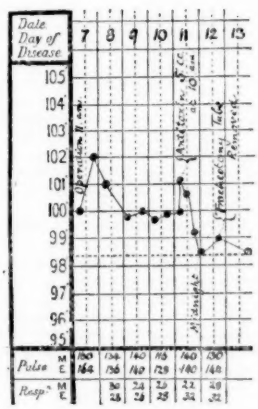
This case is interesting as showing that antitoxin is apparently powerless in presence of large quantities of the diphtheria poison. The disease is presumed, by myself and others who saw the case, to have been contracted on Oct. 3rd, and has been unanimously attributed to a visit to London, as there are no cases of diphtheria in the neighbourhood; and, moreover, I hear that a sister in another part of the country who was with him in London has since developed a sore-throat. The presumption is that he had membrane in the nose some days before the throat was attacked, and that therefore the antitoxin was not injected until a late stage in the disease—i.e., the twenty-eighth day; but the puzzling thing is that the third and strongest injection of antitoxin should have had no effect whatever either on the pulse or temperature, while the first injection, which was a small one, should have lowered the temperature immediately. Lastly, bichloride of mercury, which has been so must vaunted, was worse than useless, diarrhœa developing and the membrane spreading during its administration.

Bushey Heath, Herts.

A CASE OF DIPHTHERIA: BENEFICIAL EFFECT OF ANTITOXIN AFTER TRACHEOTOMY.

By BARRETT ROUÉ, M.D., M.S. DURH.,
PHYSICIAN TO THE HOSPITAL FOR SICK CHILDREN AND WOMEN, BRISTOL.

A GIRL four years of age was admitted to the croup ward of the Bristol Hospital for Sick Children and Women on the morning of Oct. 7th, 1894, with severe dyspnœa and well-marked chest retraction. The fauces were covered with characteristic membrane, and a cat which the patient had taken to bed with her had just died with symptoms of diphtheria. Assisted by Mr. Ewens and Dr. Jamison, Mr. W. L. Christie performed tracheotomy at once, to the instant relief of the patient's dyspnœa. On examination albumen



was found in the urine, and culture preparations were made from the faucial membrane. The temperature rose to 102° F. in the evening of the 7th; on the 8th it was 101°, on the 9th 100°, on the 10th 99·4°, on the 11th, after changing the tube for a vulcanite one, 100°, and later it was 101·2°. The tonsils and pharynx were cleaning rapidly under liquor ferri applications, but lumps of membrane came from the trachea, and as the temperature rose to 101·2° it was feared that the bronchi might become affected. With the hope of checking downward extension and of possibly lessening the paralytic sequelæ it was deemed advisable to use antitoxin, which, owing to the kindness of Dr. Armand Ruffer, we had just received from the Institute of Preventive Medicine. On Oct. 11th, at 10 A.M. (the temperature being 101·2°), five cubic centimetres were injected on the outer side of the thigh by Debove's sterilisable syringe. The temperature steadily fell, being 100·6° at 12.45, 99·8° at 1.15, 99·4° at 2.15, and 98·4° at midnight. On Oct. 12th the temperature was 99° all day, and the tracheotomy tube was removed. On Oct. 14th the temperature was normal, and never reached 99° again, save once in the evening. On Oct. 18th the urine was free from albumen and the tracheotomy wound healed. On Oct. 27th the patient was doing extremely well. No sequelæ had developed. The culture tubes of agar-agar showed a spreading membrane and some liquefaction, but they have not as yet been microscopically examined.

I think this case is instructive as illustrating the combined effects of tracheotomy and antitoxin. It was obvious that the dyspnœa was so great when the patient was admitted that, had we had the antitoxin at the time, it could hardly have been trusted to alone, although when the obstructive difficulty had been dealt with by tracheotomy the use of the antitoxin came in just at the commencement of the critical time—namely, the second rise of temperature. I am indebted to my house surgeon, Mr. W. L. Christie, for the notes of this case.

Bristol.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Prœmium.

LONDON HOSPITAL.

CASES OF DUODENAL AND GASTRIC ULCER TREATED BY LAPAROTOMY; REMARKS.

(Under the care of Mr. F. EVE.)

THESE cases of "perforative" peritonitis will be read with interest, as they are a contribution to a subject which is attracting a great deal of attention in the profession just now. Operation has been frequently performed with success when a gastric ulcer has given way, although the serious nature of such an occurrence is fully conceded, and this is emphasised by Mr. Eve's second case. We have published several cases in THE LANCET during the past few months. The surgical literature on the subject is, however, of recent date, but not so recent as that of perforation of the duodenum. The peritonitis resulting from perforation had been the reason for the performance of laparotomy on many occasions, yet the cases were looked upon as necessarily fatal, and few were considered to be worth publication until last year, when Mr. Dean obtained a successful result with suture of the opening in the bowel. These cases will always present a high mortality, and the prognosis is necessarily bad. It is possible that success will be oftener met with in the future if the plan of always emptying the distended intestines by puncture and incision be followed at the operation, as recommended by Mr. Lockwood,[1] in addition to the other precautions which are usually taken against shock, and the washing out of the abdominal cavity. It is also possible that the part played by distended intestine in such cases has not been hitherto properly estimated. It is only during recent years that the importance of promptly treating meteorism when a complication after abdominal operations for other diseases has been recognised.

CASE 1. *Perforating ulcer of the duodenum; laparotomy.*—A man aged twenty-eight years was admitted to the London Hospital about 6 P.M. on Thursday, May 10th, 1894. He presented all the symptoms of abdominal obstruction, with peritonitis. The abdomen was considerably distended, and

[1] THE LANCET, Oct. 27th, 1894.

he complained of pain, chiefly localised to the right of the umbilicus. An ounce of urine was drawn off; he had passed none since 11 A.M. He had vomited at frequent intervals all day, the vomit being of a brown colour with a fæcal odour. The skin was cold and sweating, the pulse very rapid, the temperature 100·6° F., and the respiration rapid. He had been perfectly well until Tuesday, May 8th; but on that day, about 11 A.M., while lifting some empty barrels from a van, he was suddenly seized with severe pain across the abdomen, "like a knife." Immediately afterwards he began to vomit, and he had suffered continuously from sickness from that time. His bowels had acted at ten o'clock on the Tuesday morning, but subsequently had remained constipated. Mr. Eve saw him first about midnight on the 10th and immediately proceeded to perform laparotomy. The patient was well covered with blankets, and precautions were taken to keep up the temperature of the theatre. The abdomen contained a large quantity of sero-purulent fluid with a fæcal odour, and the intestines were in parts covered with sticky and yellowish lymph. An examination of the cæcum, the appendix vermiformis, the hernial apertures, and coils of intestine within the pelvis having failed to discover any lesion, the incision was prolonged nearly to the ensiform cartilage for the purpose of examining the stomach. Immediately fluid was seen gushing from a perforation the size of a florin, which occupied the anterior wall of the duodenum, one inch from the pyloric orifice. The edges of the ulcer were quickly and superficially pared with curved scissors, and the opening was then closed with seven or eight Lembert sutures of silk. The abdominal cavity was thoroughly washed out with a solution of boracic acid. Before closing the abdominal wound a portion of omentum was laid over the seat of perforation, and a Keith's drainage-tube placed in the pelvis. Four injections of strychnia (1/6 gr.) were made during the operation, and the injections were repeated every hour afterwards. The patient was collapsed and apparently in a hopeless condition before the operation. Nevertheless, he rallied somewhat, but died three hours later. No necropsy was made, as the body was removed by the friends early on the morning of the following day.

Remarks by Mr. EVE.—This case illustrates the difficulties met with in the diagnosis of perforating ulcer of the duodenum. The man had enjoyed perfect health previously, and his symptoms precisely resembled those of internal strangulation of the small intestine. Vomiting began immediately, and was very persistent. Pain was referred to the right of the umbilicus, and not to the epigastrium. The fluid contents of the peritoneal cavity are described in the house surgeon's notes as "purulent fæcal fluid." Their reaction was not tested. The operation was performed sixty-two hours after the perforation and immediately after the patient's admission to hospital.

As a contribution to this subject I think the following case, which some years ago I had the opportunity of watching, is worth mention. The patient was a gentleman aged fifty-six years who for two or three years before his death suffered at first occasionally, and later almost daily, from pain to the right of the epigastrium. The pain always came on about two hours after a meal. Occasionally there were exacerbations of the symptoms, with pyrosis. Shortly before death he had several severe attacks of melæna, with occasional vomiting, the vomit containing sarcinæ. The fatal result occurred quite suddenly from collapse within an hour or two after the perforation. At the necropsy a large ulcer was found situated on the anterior and left side of the duodenum, just beyond the pyloric orifice. The base of the ulcer was much more extensive than the orifice of communication with the bowel. It was formed almost entirely by the pancreas, which at this point had become dense and cicatricial. The perforation had occurred in front of the pancreas, at the lower and anterior part of the ulcer. On microscopic examination the base of the ulcer was found to be composed of cicatricial tissue only, and there was no evidence of new growth.[2] The patient had suffered from syphilis, as shown by the presence of nodes on the tibiæ, and as he was otherwise a healthy and well-nourished man it seemed to be not improbable that the ulcer had its origin in a syphilitic lesion. He was seen during life by the late Dr. Wilson Fox, who diagnosed duodenal ulcer. In fact, during the later stages of the illness the nature of the malady was manifest from the recurrence of the pain about two hours after each meal, its situation being to the right of the epigastrium, and the melæna. The chronic course was evidently due to the fact that the ulcer was situated on that part of the wall of the duodenum which lies in contact with the pancreas.

CASE 2. *Perforating gastric ulcer; laparotomy.* — A woman aged twenty-two years was admitted to the London Hospital on Friday, Aug. 24th, 1894. On Wednesday, the 22nd, while pushing a bedstead she felt a sudden pain in the left side of the abdomen and felt very ill, but was able to continue her work and wait at table. On the following day (Thursday) she was up as usual and did her work, but still felt the pain "on and off." On Friday morning she was unable to rise, and vomited some black coffee-like fluid. Vomiting became frequent, with great prostration, and she was admitted to the hospital in the afternoon. Mr. Eve saw her about two hours later, when she felt much better, and the vomiting had ceased. She looked pale, anæmic, and somewhat prostrated. There was slight but indefinite fulness of the abdomen, which was resonant but by no means tympanitic, and not tender except on pressure over the epigastrium, and there was slight increase of muscular resistance. Abdominal respiration was present. The pain was referred to a spot below and to the left of the umbilicus, "going through to the back." The bowels were last opened on Wednesday, Aug. 22nd. The temperature was 100·5° F. The rectum contained scybala. It was elicited that a little time before she had suffered for about three months from indigestion, but she stated that during the previous few weeks these symptoms had disappeared. It was surmised that she might be suffering from localised peritonitis following perforation of a gastric ulcer; but as the vomiting had ceased for some two or three hours and she seemed much better since her admission to the hospital it was decided to postpone operation. During the night she became worse, and early next morning, as the abdomen was found to be distinctly firmer and fuller, laparotomy was performed, an incision being made between the umbilicus and the pubes. The peritoneal cavity contained a considerable quantity of turbid serum. The intestines were injected, and in a few places lymph had been exuded. Nothing abnormal being found about the cæcum, the vermiform appendix, Fallopian tubes, or small intestine, the incision was extended upwards. On exposing the stomach and edge of the liver a layer of lymph was observed beneath the edge of the latter, and when it was raised and the soft adhesions were separated a gush of fluid took place from a perforation the size of a threepenny piece on the anterior wall of the stomach. The opening was situated vertically below the cardiac orifice, and an inch and three-quarters from it, lying beneath the costal cartilages. It was closed with four or five Lembert sutures, and the abdominal cavity was thoroughly and systematically irrigated with a 1 in 4000 solution of perchloride of mercury. A Keith's drainage-tube was inserted in the pelvis. The operation lasted seventy minutes. Subsequently the patient took nothing by the mouth, and nutrient suppositories or injections were given every two hours. The following morning (the 26th) she felt better. The Keith's drainage-tube contained one ounce of red serum and the temperature was 101°. On the 27th she had passed a restless night, and the temperature at midnight had risen to 104°. She died at 11.30 A.M. There was no vomiting after the operation.

Necropsy.—A small amount of fluid was found in the pleural cavity, the peritoneal cavity also contained a small amount of fluid, and there was moderate injection of the intestines at the line of contact. There were no flakes of lymph, except a small mass at the bottom of the pelvis and a layer on the under surface of the left lobe of the liver, which was adherent to the stomach around the situation of the ulcer. After removal of the stomach it was filled with water, and the site of the ulcer was found to be perfectly watertight. There was marked cloudy swelling of the liver, kidneys, and heart, and this condition was verified with the microscope.

Remarks by Mr. EVE.—This case appears remarkable from the subacute character of the symptoms following the perforation. She was able to continue her work of a domestic servant for more than twenty-four hours after that event. The history on this point was clear, and the condition of the peritoneum was confirmatory of it. A leakage of gastric contents evidently took place into the peritoneal cavity; but the perforation subsequently became quite sealed, owing to the glueing by lymph of the stomach to the posterior surface of the left lobe of the liver. The patient was not seen until

[2] The specimen is preserved in the Museum of St. Bartholomew's Hospital, No. 1967.

two days after the perforation, and even then the symptoms of peritonitis were masked and indefinite. The operation was performed sixty-one hours after the perforation took place. The patient survived the operation for more than forty-eight hours, and the peritonitis appeared to be subsiding, but there was a small localised collection of sero-purulent fluid near the spleen. In another case of perforating gastric ulcer which came under my care in February last the patient was a girl aged eighteen years. The perforation took place while she was in church, but although suffering great pain she succeeded in walking home, a distance of one mile. I saw her and performed laparotomy eighty hours afterwards, but after opening the abdomen and exploring I had to desist and close it on account of the patient's condition, but expressed the opinion that there was a perforating gastric ulcer, and at the necropsy this was found on the anterior wall of the stomach, near the lesser curvature.

ROYAL INFIRMARY, NEWCASTLE-ON-TYNE.

TWO CASES OF URETEROTOMY FOR REMOVAL OF CALCULI.

(Under the care of Mr. RUTHERFORD MORISON.)

THE surgical treatment of calculus in the ureter is of quite recent date. We find no mention of any surgical condition of the ureter in the Dictionary of Practical Surgery for the year 1886. Indeed, it was not until THE LANCET published the case (now historical) of the successful removal of a calculus from the ureter by Dr. Kirkham in 1889 that the literature on the subject can be stated to have commenced. Since that time several operations have been undertaken for the removal of impacted calculus, and these have been often followed by success. These two cases are most interesting examples of the different circumstances under which operation for ureteral calculus may be required: (1) when the life of the patient is threatened in consequence of impaction of a stone in the ureter of a kidney which is the only useful one; (2) when the patient's life is unendurable on account of the frequent attacks of pain which the impacted stone causes. Under the former heading are included the most serious cases and those which are from the induced anuria least likely to do well. Successes have, however, been obtained by several surgeons in this country, and we cannot but admire the skill which they have displayed. The removal of a calculus through an incision in the ureter behind the peritoneum has proved the most successful method of operation, even when the incision was made close to the bladder; the stone has also been extracted by incision through the vaginal wall. In both cases the patient recovered, but one suffered afterwards from fistula. When impacted near the orifice of the ureter the calculus has been removed by the curette after dilatation of the urethra; it has also been removed by incision through the bladder wall. There is a great risk of peritonitis after incision in this situation, and it cannot be recommended. An abdominal incision opening the peritoneum, thus permitting of the localisation of the stone and its manipulation to a higher point in the ureter, where extraction can be easily made through an incision in the lumbar region, has been successfully employed. The surgeon has thus several methods open to him, each of which, with the exception of the one through the bladder wall, has been used with success.

CASE 1. *Suppression of urine due to calculous obstruction of right ureter; exposure of ureter at its bladder entrance; removal of two calculi; the left ureter already obstructed by stones impacted in the middle; uræmia; death; necropsy.*—The patient was a man forty-six years of age. He was admitted into the Royal Infirmary, Newcastle-on-Tyne, under the care of Dr. Drummond, on Aug. 22nd, 1891, complaining of severe pain in the loins and inability to pass urine. On Aug. 13th, nine days before admission, when at work, at 9 A.M. the patient was suddenly attacked by a severe pain in the right side just above the hip-bone. One and a half hours after the commencement of the pain he vomited, and the pain went from his right side into the right testicle. The pain soon abated in violence, though it had persisted in his back ever since. He continued his work and noticed nothing wrong with his urine on that particular day, but since that time he had passed very little. For three or four days before his admission to the infirmary he was frequently sick, but continued at work till Aug. 21st (the day before admission). He had no headache. On Aug. 21st he was unable to go to work on account of the severity of the pain and sickness, and came into the infirmary on the following day.

Previous health.—Four years and a half ago the patient had an attack similar to his present one. He had severe pain in the right side and back, which continued more or less for three weeks. During the first week he passed urine freely, but for the last fortnight the amount voided was very small. At the end of this time he passed two small stones about the size of peas, got rapidly well, and had had no further trouble up to the present time.

Aug. 23rd: The patient has slept well. He has only passed two or three drops of urine since admission. The catheter, passed this morning, drew off four drachms of albuminous urine.—25th, A.M.: He has passed forty ounces of urine since yesterday morning. He was sick once last night; he still has pain in the right side. P.M.: He has passed no urine since 8.30 A.M. He was sick at 12 noon after a purgative mixture. He is still in pain.—26th, A.M.: The patient has passed only half an ounce of urine since last night. The sickness has ceased. The bowels were moved three times. He still suffers from pain. P.M.: He has passed no urine since this morning. He sleeps a good deal with his mouth open, and has some difficulty in speaking, as if his soft palate was paralysed. It is very dry.—27th, A.M.: He has passed no urine since last night. The bowels were moved twice during the night. He was roused with some difficulty from his stertorous sleep. The tongue is dry and hard. He has spasmodic twitchings of his arms and legs, especially on the right side. At 3 P.M. Mr. Morison saw the patient with Dr. Drummond. The diagnosis Dr. Drummond had arrived at was that the right ureter was blocked by a calculus, and that the left kidney for some reason or other was *hors de combat*. The only possible treatment was to get the calculus out of the ureter, and this they decided should be done notwithstanding that the patient's general condition held out slender hopes of his recovery, and that his enormous stoutness made the operation exceptionally difficult and dangerous.

The condition of the patient was as follows. He was a hugely fat man, said to weigh 23 st. He was unconscious, cyanosed, had Cheyne-Stokes breathing, and frequent twitchings of the muscles. The pulse was slow and of good tension. Chloroform was administered. Assisted by Dr. Drummond, Mr. Morison exposed the right kidney by the ordinary oblique incision in the loin. Nothing was found in the kidney, but its pelvis and the upper end of the ureter were felt to be considerably dilated. The oblique incision was prolonged downwards in the abdominal wall and the ureter, dilated like a sausage, more fully exposed. By prolonging the incision to the centre of Poupart's ligament and tracing down the dilated ureter it was exposed in the pelvis, and one stone about the size of a filbert and another half this size were discovered firmly impacted in a position thought to be close to the bladder. An incision was made over the stones, which were turned out, and the opening in the ureter was sutured with fine catgut. The patient's breathing had become steadily more difficult and altogether ceased just before the completion of the skin suturing.

A necropsy was made on the following day. The amount of fat was enormous. It was evident that the right kidney, its pelvis, and the whole length of the ureter had been explored. The right ureter throughout was as large as a sausage. Within an inch of the bladder there was an opening in it one inch long secured by a catgut suture. The opening into the bladder was free. There were no stones in either ureter, pelvis, or kidney. The kidney was sacculated and much diseased, being in a condition of advanced interstitial nephritis. The left ureter was completely blocked about the middle by a stone. Above and below the obstruction the ureter was dilated. The left kidney was sacculated, and no trace of healthy kidney substance was left. It was evident that this kidney had not been in use for a long time.

CASE 2. *Stone impacted in the ureter about three inches from the kidney; kidney drawn out on the loin and opened; a stone discovered by probe in ureter; incision of ureter; no suture; recovery.*—The patient was a man thirty-one years of age who was under the care of Drs. Slater and Horsfield, from whom, as well as from Dr. Raymond Shaw, Mr. Morison received valuable assistance during the operation. The man complained of pain in the left kidney. Nine years previously he first felt pain in the left loin. It came on suddenly and soon passed off. For the next five years he had occasional pains in the same place, but never lasting for any length of time. Four years since he had a bad

attack, which laid him up for a fortnight, after which he had a respite till May, 1892. From May to July he had occasional attacks, but not bad enough to prevent him from going to his office. From July up to Sept. 26th he suffered from frequent and severe attacks, which had invalided him and made his life intolerable. Before his illness nine years ago he was always strong and healthy. His father is living and well, but has passed stones from his bladder. There was nothing else noteworthy in the family history. When Mr. Morison saw the patient he was a stout, short, muscular man, with a pale, dark complexion. All his organs were healthy except the urinary organs. A sample of urine obtained was acid, sp. gr. 1018, and contained a trace of albumen and (microscopically) pus. Micturition was slightly increased in frequency; he had to get up during the night more than once, and during the painful attacks he had an urgent desire to micturate. The pain was referred to the neighbourhood of the left kidney, travelled down towards the bladder, and was increased by exercise. No blood was ever seen in the urine. The only sign discovered on physical examination was marked tenderness when sudden deep pressure was made in the left loin posteriorly.

The following operation was performed on Sept. 29th, 1893. The kidney was exposed by the ordinary oblique incision in the loin with some difficulty on account of the stoutness and muscularity of the patient; nothing could be felt in it. The incision was then prolonged in front down the linea semilunaris and the kidney separated from its bed and drawn out on to the loin. This was no easy matter, for the wound was of great depth, and the kidney, as so frequently occurs when pus is present in it, was adherent to the indurated peri-renal fat. The kidney was then opened in the centre of its outer convex border, and a finger introduced examined every part of its interior. There was no calculus. A thick long probe was then passed into the pelvis of the kidney and down the ureter, where it grated against a stone at some distance from the kidney. The scoop end of a director was next passed down the ureter along the probe and grated against, but could not move, the stone. Many other attempts to dislodge the calculus with forceps and scoops were also unsuccessful. The ureter was next exposed at its origin and followed downwards. About three inches from the kidney the calculus was discovered and fixed between the finger and thumb. Attempts to push it towards the kidney failed, as did attempts to move it with a scoop and forceps, for it appeared to be embedded in a diverticulum off the ureter. Finally the operator cut down on it and squeezed it out through the small incision made in the ureter. The kidney, ureter, and the wound were then freely washed with corrosive sublimate lotion because of possible pus infection from the suppurating pelvis, and the opening in the kidney was closed with catgut sutures. No attempt was made to close the opening in the ureter. The wound was carefully brought together by deep and superficial sutures of specially prepared catgut except at its posterior extremities, through which it was drained by means of an iodoform gauze wick.

The after-progress of the case was satisfactory. The wound healed throughout by first intention, except where the gauze kept it open. Modified infection of the wound, however, must have occurred, for the track of the gauze became a suppurating sinus, which had not entirely closed till Jan. 20th, 1894, nearly four months after the operation. For the last six months the patient has been in excellent health.

Medical Societies.

PATHOLOGICAL SOCIETY OF LONDON.

Myeloid Corpuscles in Rare Examples of Cancerous Disease.—Extensive Peri-renal Hæmorrhage.—Mediastinal Tumour invading Lung.—Congenital Cystic Adenoma of Kidney.—Adenoid Carcinoma of Kidney.—Perforation of Soft Palate in Scarlet Fever.

AN ordinary meeting of this society was held on Nov. 6th, Dr. PAVY, President, being in the chair.

Dr. HERBERT SNOW showed some Myeloid Corpuscles in some Rare Examples of Cancerous Disease. He exhibited sections from three cases and made some remarks on the *rationale* of the giant corpuscle (myeloid). The first case was that of a woman aged sixty-two years with a large, rapidly growing spindle-celled sarcoma of the left breast, very soft and vascular. The axillary glands were enlarged, but on removal proved to be converted into small cysts filled with black grumous fluid. In the second case a cyst of fourteen years' duration had undergone rapid increase after injury two months previously. It was as large as an orange when removed, and contained recent vegetations of spindle-celled tissue. The myeloid cells occurred in the thick cyst wall. The third case was one of ordinary carcinoma in a woman aged forty-five. A scirrhous growth equal to a large bean was excised in October, 1885. On removal the cut surface was of a uniform reddish-black tint, resembling melanosis. An axillary gland presented similar characteristics. Recurrent nodules were subsequently removed in February and in October, 1887. They presented like features, the cut section being of a black or reddish-black colour, the microscopic sections presenting true myeloid cells blended with the familiar alveoli of carcinoma. The patient had remained perfectly well up to date. Although huge multinucleated cells were not very uncommon in carcinoma Dr. Snow believed that myeloid cells had not previously been described. One or two cases similar to the first had been reported some twenty years since, he believed, to other societies; at that time these little bodies were referred to the bone-marrow, a view now exploded. In malignant growths they appeared to be purely passive elements of the parenchyma, for the so-called "myeloid sarcoma" of the text-books was but an ordinary spindle-celled sarcoma with the giant corpuscles superadded, and nowise differed in clinical career from the spindle-celled sarcoma pure and simple. There was no evidence in favour of the theory which would regard them as macrophages. Most contained leucocytes, varying in number from one or two to 150; but some were perfectly amorphous, and these offered the key to the real nature of the myeloid cell, which was simply a microscopic fragment of fibrin, a minute blood-clot. The one condition essential to its appearance that could be discerned was extreme vascularity; in addition some idiosyncrasy was probably needed.—Mr. BOWLBY remarked that cells containing many nuclei were to be found in a large number of carcinomata, and giant cells were of course common in sarcoma. The specimens shown appeared to be remarkable in the number of these bodies that they contained. He alluded to a case, which he saw many years ago, of a rapidly growing carcinoma of the breast, which broke down and formed a cavity full of clot; the growth contained many giant cells.—Dr. SNOW, in reply, said that he had never seen true myeloid corpuscles in malignant disease before, though he had often met with giant cells. The specimens were referred to the Morbid Growths Committee.

Dr. F. H. HAWKINS (Reading) exhibited a specimen showing Extensive Peri-renal Hæmorrhage. The left kidney was embedded in a hæmorrhagic mass, which was also connected with a hæmatoma on the inner surface of the left internal oblique muscle. There was likewise hæmorrhage round the right kidney, chiefly on its posterior aspect, but this was much less extensive than on the left side. The specimen was removed from a man aged thirty-one years who had been admitted into the Royal Berkshire Hospital suffering from peripheral neuritis, œdema of the legs, and mitral regurgitation. The patient had his first attack of rheumatic fever six years, and a second attack fourteen weeks, before admission. Since the onset of the second attack he had suffered from peripheral neuritis, pains in the abdomen, and fluctuating swellings over the left kidney, the right lumbar region, and just above the left iliac crest. At the necropsy there were found, in addition to the peri-renal hæmorrhage, cardiac hypertrophy with dilatation of the mitral orifice and retraction with thickening of the mitral cusps. There was also an infarct in the anterior border of the right lung, and another in the spleen. The case exhibited no signs of purpura hæmorrhagica, and the opinion was expressed that the hæmorrhage was due to blocking of an artery with consecutive formation of an aneurysm, which had ruptured.—Dr. PITT remarked that the retro-peritoneal rupture of aneurysms sometimes caused tumours containing blood in the renal region. In one case a patient presented a tumour over the kidney which was diagnosed either as hydronephrosis or new growth. The swelling was cut down upon, but was found to be so vascular that the incision was closed. After death the cause of the extravasation was discovered to be a small ruptured abdominal aneurysm. In another case a man came into hospital collapsed and with some of the signs of intestinal obstruction, vomiting being present with constipation and very severe abdominal pains. An aneurysm

was found to have ruptured behind the peritoneum, and there were extravasations round both kidneys, but no tumour could be felt in this case during life. He asked if there was any evidence of fungating endocarditis in the case shown. This might have led to both infarction and aneurysm.—Dr. HAWKINS, in reply, said that there were no signs of ulcerative endocarditis.

Dr. J. E. SQUIRE showed a specimen of Mediastinal Tumour invading the Lung. The patient, a man aged thirty-seven years, was admitted to hospital in May, 1894. In February, 1893, he had influenza, in July, 1893, sudden onset of severe pain in the chest, and in September, 1893, coffee-coloured expectoration. On admission there was slight uniform œdema of the upper extremities, shoulders, neck, and head, with full and prominent veins. There was some dyspnœa. Examination of the chest showed poor entry of air into the right lung, consolidation of the apex of that lung, and fluid in the right pleural cavity. The diagnosis then made was new growth, probably sarcomatous, involving the root of the right lung, vena cava, and pneumogastric nerve, and invading the upper lobe of the right lung. The dyspnœa and dysphagia increased, and about three weeks after admission there was sudden dyspnœa with cyanosis, loss of consciousness, and violent delirium. Aspiration of the chest relieved the dyspnœa, but the patient never recovered consciousness. These symptoms were attributed to "meningeal effusion." The temperature throughout was subnormal. The cerebral meninges were œdematous, with small hæmorrhages into the pia mater. The anterior superior mediastinum was occupied with a dense white growth enveloping the superior vena cava, arch of the aorta, and nerves, right bronchus and trachea, and pressing back on the œsophagus. The growth infiltrated the upper lobe of the right lung. There was no similar growth elsewhere. The comparatively small number of cases of mediastinal tumour recorded in the Pathological Society's Transactions seemed to indicate that such growths were not common, but he had met with three within the last six months. The symptoms and physical signs in this case rendered the diagnosis simple. The total duration of the growth was apparently about twelve months, agreeing closely with the average duration found by Walshe for malignant disease of the lung—viz., 13·2 months. The mode of death by meningeal effusion was interesting and unusual.

Mr. EDGAR WILLETT exhibited two specimens of New Growth in the Kidney which had been removed by operation. The first was from a child aged eleven months under the care of Mr. Walsham. Recovery followed, but there was recurrence, and the child died a year later. The structure was that of a cystic adenoma. The second was from a young man aged nineteen years under the care of Mr. Thomas Smith. Recovery also followed, and eighteen months later the patient was in good health. The structure was that of a carcinoma. The chief point of interest was that, in the one case, which from the microscopical examination appeared to be innocent, death soon followed from recurrence of the disease; in the other case, apparently carcinomatous in character, the patient remained well.

Mr. TARGETT showed on the screen photographs of several Congenital Renal Tumours. The first was a kidney with a large growth attached to it. The growth was lobulated and was many times larger than the kidney. Microscopically it contained tubes of various sizes lined with columnar epithelium, and in other parts of the specimen epithelium was present in solid follicles, resembling fœtal thyroid. It was an adenomatous growth with but little connective tissue. It was removed eighteen months ago from a child aged two years, and the child was still quite well. The second specimen was a kidney of the same nature. The tumour grew within the organ at the hilum, the kidney being distended over the growth. The growth formed three or four large lobules, which microscopically showed tubes containing a lumen and lined with columnar epithelium, and also solid masses of epithelium scattered about. This specimen also was an adenoma. The third specimen showed microscopically alveoli of angular shape, containing immature gland epithelium and ducts, with solid follicles like thyroid. Another part of the tumour showed large spaces, which were apparently cysts. As the cysts grew larger the epithelial lining disappeared and the basement membrane remained. There was a small amount of spindle-celled stroma. The fourth specimen showed a fibrous capsule surrounding both the kidney and the growth. The tumour sprang from the hilum and distended the organ. The growth was in parts fibrous and in parts softer. Microscopically some areas were composed of striped muscle, others of muscle and gland tissue mixed, and others again of gland tissue only, containing numerous ducts. The fifth specimen was a similar one, partly composed of striated muscle and partly glandular and cystic. The sixth specimen was a tumour which contained larger cysts with dilated vessels; some of the cysts appeared to be produced by liquefaction and others by mucoid transformation of the growth. The seventh specimen was the opposite kidney from the same case as the last, and showed a similar growth attached to the convex border of the organ. There was a separate nodule blending with the renal tissue. The eighth specimen was a kidney almost entirely sarcomatous, and was likewise attached to the convex border of the kidney. In that case there was associated enlargement of the lymphatic glands, but this was found on microscopical examination to be inflammatory only. The ninth specimen was a large tumour springing from the convex border of the kidney at its upper end, and microscopically proved to be a small round-celled sarcoma. In the tenth case the growth filled up the hilum so as to make a model of it, and then passed into the kidney substance along the vessels between the pyramids. The growth lay entirely outside the ureter. The eleventh specimen was the opposite kidney from the same case as the last; the tumour resembled it in position; microscopically it consisted of a mixture of striated muscle cells, elastic fibres, adipose tissue, and ill-developed connective tissue. There was no glandular element present. All the previous cases were obtained from children. He then showed a twelfth case from a girl aged eighteen years; the growth was entirely composed of cysts and lay in the convex border of the kidney. The cysts were lined with cubical and columnar epithelium. The specimens he had shown demonstrated that these growths might be seen in all varieties, from pure gland tissue, through mixed gland and connective tissue with muscle fibres, to pure sarcoma.—Dr. SNOW thought the term "adenoma" was not a good one for these growths, which included both benign and malignant varieties. He believed that they arose from unobliterated vestiges of the Wolffian body. They usually contained a multiplicity of structural elements, and sometimes even bone and nerves. He thought that "blastoma" was a good name to apply to these vestigial growths.—Dr. PITT said that another group of interesting cases were the small nodules of new growth found in the cortex of adult kidneys. The growths varied in size from that of a pea to three-quarters of an inch in diameter. In eight years at Guy's Hospital they had met with seven such specimens. Microscopically the small nodules showed a glandular structure, the tubes being lined with cylindrical epithelium without a central cavity. Others were merely small fibromata, and in these perhaps the adenomatous element had atrophied and disappeared. None of them showed signs of active growth or malignancy. These cases in adults might be due to aberrant renal bodies, while no doubt in infants they arose from unobliterated Wolffian vestiges.—Mr. E. WILLETT, in reply, said that the smaller tumour which he exhibited resembled thyroid gland in structure. He defended the use of the term adenoma for these growths.—Mr. TARGETT, in reply, said that many names had been suggested for these growths, the most suitable of which were perhaps "embryonic renal tumours" or "congenital renal tumours." They differed entirely from carcinomata in that they usually occurred under the age of three years, that they arose from immature gland tissue, that they did not invade adjacent organs, and when secondary growths appeared it was generally due to mechanical transference along the veins. The cause of death also was mechanical obstruction of the respiration or the circulation.—Dr. SNOW added that he had seen cases in which there were metastatic growths like true carcinoma invading lymphatic glands.

Dr. E. W. GOODALL read a paper on Perforation of the Soft Palate in Scarlet Fever and showed a specimen which was taken from a child aged six years, admitted into the Eastern Hospital, Homerton, with scarlatina anginosa. The perforation was first observed four days before death. There was a large perforation in the left anterior pillar of the fauces, extensive ulceration of the right anterior pillar, ulceration of the uvula, and sloughing of the tonsils. He had seen fourteen cases of perforation of the soft palate in scarlet fever. In two cases there were three perforations; in three cases, two; and in nine cases, one. They occurred at dates varying from the ninth to the twenty-eighth day of the disease. The perforations were usually to the side of the anterior arch. They might persist for several weeks. At any rate, in some cases

they could still be seen when the patient left the hospital. In only two cases had he seen such perforations occur in diphtheria. The perforations were probably the result of a local sloughing.

HARVEIAN SOCIETY OF LONDON.

Bacteriology in its Practical Aspects.

A MEETING of this society was held on Thursday, Nov. 1st, the President, Mr. GEORGE EASTES, being in the chair.

Dr. R. T. HEWLETT read a paper entitled "Bacteriology in its Practical Aspects." He began by saying that it was difficult to define what was meant by bacteriology, but said that it was a science which dealt with micro-organisms in their relation to processes, disease, fermentation, putrefaction, &c. He showed the value of bacteriology in commerce, in brewing, in fertility of soil as influenced by nitrifying organisms, and in silkworm industries. In brewing it was shown how pure cultivations of yeast were coming largely into use. The subjects of antiseptics and aseptics in surgery were next considered, and the speaker insisted upon simplicity in all antiseptic methods of treatment. He said that the aseptic system must occasionally break down, no matter how carefully it was carried out, and that the antiseptic system was the only logical one and was safer in the long run. It was shown that dilute solutions of corrosive sublimate were by no means stable, but the addition of a very small quantity of hydrochloric acid rendered the solution stable. Antiseptic solutions were shown to be more powerful in their effects when their temperature was raised, anthrax spores surviving a thirty-six days' immersion in a 5 per cent. aqueous carbolic solution at the ordinary temperature, whereas they were soon killed in that solution at 55° C. This use of hot solutions was of importance where a strong antiseptic effect was desired locally. Reference was made to local antiseptic treatment in diphtheria and tetanus. Dr. Hewlett next showed how we are indebted to bacteriology for the promising antitoxic treatment, and he described the principles upon which antitoxins were prepared, and referred to their immunising power. He then referred to the value of bacteriology in the diagnosis of tuberculous disease, showed how the inoculation method in that disease was a further development, and described the manner in which it was carried out. He said he would like to see tuberculosis made a notifiable disease, and described the advances made recently in New York in this direction. He then discussed the value of tuberculin and mallein, and showed how the latter was prepared and the manner in which it was used as a diagnostic agent in glanders. He reviewed the diagnosis of anthrax, cholera, diphtheria, and gonorrhœa by the aid of bacteriology, and referred to the excellent facilities afforded in New York for the rapid diagnosis of diphtheria. The effects of sewer air upon animals were then described, and it was pointed out that, whether organisms were or were not present in sewer air, it had a marked effect in lowering the vitality of animals exposed to its influence. In conclusion, Dr. Hewlett said that the practical applications of bacteriology bade fair to be much extended in the future, so that it was a matter for surprise, if not regret, that no elementary course of bacteriological training was included in the five years curriculum. The paper was accompanied by specimens of antitoxin, mallein, and microscopic specimens of various micro-organisms under one-twelfth inch objectives.

Dr. H. A. CALEY expressed the opinion that one of the most important practical bearings of bacteriology was in relation to the dissemination and prevention of tuberculosis. The important part played by predisposing causes and associated conditions in the development of tuberculous affections did not detract from the necessity to impress upon individuals and communities the need for the adoption of such measures as were calculated to lessen the dissemination of the specific organisms; while, at the same time, due attention should be paid to the various conditions, general and special, which were known to influence the prevalence and development of the disease.

Dr. SOLOMON SMITH drew attention to the large *rôle* now thought to be played by mixed infections, and inquired whether recent investigations had indicated the existence of any companion to the comma bacillus of cholera by the coöperation of which its virulence might be raised to epidemic importance; for it was obvious, from the researches which had been made in recent years in cases of isolated outbreaks, and even in places where no outbreaks had occurred, that, however important a factor the comma bacillus might be, it was not by itself the sole cause of cholera epidemics.

The President, Dr. Hill, Dr. Scanes Spicer, Mr. Cripps Lawrence, and Dr. Boxall also took part in the discussion.

THE ISLINGTON MEDICAL SOCIETY.

Gout and its Relationship to Uric Acid.

A MEETING of the above society was held on Oct. 23rd, at 423, Liverpool-road, N., Mr. GEORGE WIGHT being in the chair.

Dr. RALFE read a paper on Recent Theories of Gout as bearing especially on the Pathology of Uric Acid. Having reviewed successively the various theories as enunciated by Garrod, Murchison, Latham, Ebstein, Leube, Sir Dyce Duckworth, Sir William Roberts, and others, he declared that his convictions were on the side of the mechanical exponents of the disease rather than with the chemical theorists, because he thought this view was more in accordance with the known facts at our disposal than the hypotheses, able as they were, that had to be resorted to, to establish any one of the numerous chemical theories of uric acid formation and retention. He also called attention to the abuse of the term "gouty" that had lately sprung into use. Every age had had its limbo to which every unrecognised disorder had been thrust. In the eighteenth century it was scurvy, at the beginning of this it was struma, and now it was gout. Eczema, for instance, was no longer referred to as a "touch of scurvy" or scorbutic taint, or to a scrofulous origin, but to gout—or rather to uric acid—and so with a long list of disorders and anomalous symptoms as lengthy as Leporello's enumeration of Don Juan's loves. These wide-reaching hypotheses were built, Dr. Ralfe observed, on very slender foundations, for there was no evidence to show that uric acid was necessarily formed to any extent in the human body as an antecedent to urea. On the other hand, it tended to prove that it was destroyed or utilised at the seat of its formation—or, rather, the products were destroyed or utilised that would form it—and urea was derived from other sources, as kreatine and leucine. This view was borne out by the extremely minute trace of uric acid daily excreted with urine—a portion so minute that Parkes ridiculed the idea of its representing the overplus of what had escaped conversion in the body, and Sir William Roberts considered it might merely represent a *vestigium* of the solid urines of lower organisms. Again, the insolubility of uric acid and its salts was against the view of any ordinary formation within the body, or retention, lest we should fall into the mishap described by the poet, of those who were encased in chalk and furnished sufficient material to build their tombs with! Nor had we any evidence that uric acid, except when deposited or depositing, had any specific poisonous influence. Many experiments had been quoted on both sides, but Dr. Ralfe observed that a clinical fact was worth many experiments on animals. In a case of simultaneous double obstruction from uric acid calculi which he had seen with Dr. Brookhouse of Brockley the patient did not pass a single drop of urine for four days before relieved by operation. During that period she was in her usual state of health; there was not the slightest evidence of "uric-acidæmia" showing accumulated uric acid in the blood; that it was not retained in the tissues was evident, since no deposit occurred in the joints. Owing to these main considerations, though other arguments were adduced, Dr. Ralfe considered uric acid to be a consequence, not a cause, of gout. The view he propounded was that in health uric acid in the human organism was destroyed or used up at the time of its formation, so that it did not appear to any appreciable extent in the circulation; but during the gouty paroxysm, owing to some disturbance of metabolism brought about by nervous influences, or presence, or withdrawal of some ferment, uric acid was not used up, but, like sugar in diabetes, passed freely into the circulation, and, being highly insoluble, was deposited in the extra-vascular tissues. Alluding to what had proved to be the chief crux to chemical theorists, Dr. Ralfe remarked that diminution of the amount of uric acid in the urine during the gouty paroxysm need present no difficulty, since physiological experiments showed that when an excess of urates was supplied to the renal epithelium its secreting function soon became exhausted and the salts retained (Heidenhain). But if the view was taken, though it was in no way necessary to Dr. Ralfe's theory, that the uric acid daily eliminated in such

minute quantity did not come from the organism at all, but represented simply the metabolism of the kidney parenchyma, then we had an explanation of how in some cases, such as those of primary kidney gout, the brunt of the disease fell on these organs. With regard to the dominant position that had been assigned to uric acid and its apparent ubiquitous nature, Dr. Ralfe felt assured that the view adopted had outstepped all rational bounds and was paralysing progress by arresting further observation and research. The non-nitrogenous acids were as worthy of regard as the nitrogenous, whilst among the many causes of auto-infection toxines of the nature of ptomaines still called for further investigation. Nor should it be overlooked that many of the disturbances attributed to uric acid might be caused, not by the positive addition of a poison, but by the withdrawal of some inhibiting agent, as was seen in the case of the destruction of the thyroid gland and development of myxœdema. Later, speaking of the application of this simple explanation of the pathology of gout to the therapeutics of the disease, Dr. Ralfe remarked that it restored to us the rational views of Sydenham, and did not urge us to pursue to its destruction every molecule of uric acid, to the neglect of the patient's health. With regard to dietetics, the very different views that obtained showed how little the chemical theories were in accord; for according to one theory carbohydrates, especially sugar, were prohibited; another objected to hydrocarbons; whilst a third theorist tabooed an animal diet; so that the gouty patient, if each view was correct, would be precluded from any food at all. Here Sydenham's common-sense view came to our relief—that moderation in all should be our guide; that a supervision of quantity was more important than restriction of quality; and that that best suited to the individual should be chosen. In plethoric and sthenic cases a wise asceticism should be exercised. In chronic and enfeebled patients a more stimulating diet was indicated. So also with the vexed question of alcohol. No doubt in theory good whisky well diluted was a neutral stimulant, well suited to the enfeebled digestion of the gouty; but, except among the privileged, where could it be obtained? With regard to wines, clarets, according to Prout, often increased gouty pains; white wines, such as champagne and hock, were liquored; and port wines, till the acid tartrates were deposited in the form of "crust," were known as provocative of gout, though perhaps a glass of old bottled port was the best form of alcohol we could permit in the case of a debilitated gouty patient. Here, again, Sydenham's rational dictum, "moderation" came into force: the use of alcohol was injurious, but complete abstention was worse. Each case must be judged by its individual merits. So also with the application of medicines. No one should attempt to treat an outbreak of acute or frank gout by repressive measures; all that should be done was to attend to the evacuation of the bowels, to relieve pain, and encourage the arthritic outbreak. In the chronic form the treatment was more difficult, as the patient's general health was much enfeebled: it was in these cases that the Bath waters did so much good. Dr. Ralfe decried the universal and indiscriminate use of alkalies at present in fashion. The treatment of each case should be regulated by the general condition of each patient, and not dictated by a hard-and-fast rule, the outcome of hypothetical chemical theories; but it was always safe to attend to the primary digestion and effect a daily evacuation of the bowels. For this latter purpose he had found the "morning glass" of Sir Astley Cooper grateful and beneficial to all classes of patients. Between the intervals the main object should be to improve the general health, and remove, as far as possible, the ill-effects of the exudation in and round the joints. Attention to the primary digestion was the first consideration. He advocated the use of eliminating waters such as Carlsbad for the plethoric, or Homburg for the more feeble; whilst moderate exercise, such as riding and carriage exercise, restored the enfeebled circulation in the extra-vascular parts. This in crippled patients could be effected by massage, and also by douches, of which those of sea water were particularly agreeable and efficacious.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.

Discussion on Diphtheria.

A MEETING of this society was held on Nov. 2nd, Dr. BANNING being in the chair.

A discussion on Diphtheria was opened by Dr. CAMPBELL POPE in an exhaustive paper on the etiology, pathology, and treatment of the disease. With regard to etiology he raised the following questions: (1) What is the character of a locality where the disease is endemic? (2) Under what circumstances does it become epidemic in such places? and (3) How is it carried to other localities? In answer to this first question, he stated that insanitary conditions, malnutrition, and a moist atmosphere tend to make the disease endemic. He quoted as an example in his own practice the case of a school which was built on marshy ground and was surrounded by poor dwellings. Here he believed the disease to be endemic. The importation of a case of diphtheria, followed by the infection of the drains, will produce an epidemic in such a locality. Under the third head, he considered that milk was the most fruitful vehicle for the transmission of the disease, but admitted that it may also be conveyed by other articles of food such as groceries; infection by domestic animals must also be remembered. With regard to diagnosis he emphasised the importance of careful clinical examination of the cases; and although he did not consider every case with membrane on the tonsils only as necessarily diphtheritic, he held that the extension of the membrane to other parts was pathognomonic of the disease. Pyrexia was of doubtful diagnostic value, but albuminuria, intense prostration, and subsequent paralysis were important diagnostic agents. Alluding to the varying severities of different epidemics, he described eight forms of diphtheria which presented more or less different clinical symptoms. After considering the published reports of cases treated with antitoxic serum, he was still inclined to lay the greatest stress on sanitation in the treatment of the disease.

Dr. HOOD referred to the fallacy of statistics in this disease, and mentioned some deductions drawn from 200 cases treated at the West London Hospital. He especially emphasised the decrease in mortality after the age of seven years. He considered diphtheria to be a disease of modern origin, since no mention is made of it in the old medical writings, and that its widespread distribution has come about during the present generation. He had noticed that, in some cases where the membrane was especially abundant, the prognosis was favourable.

Dr. DREWITT insisted on the necessity of free ventilation and the allowance of abundant cubic area to each patient in the treatment of diphtheria; and referred to an epidemic of the disease which occurred at a children's hospital immediately following the closing of the windows and ventilators in order to keep out dust. No epidemic had previously occurred at this hospital, although the cases were transferred from the isolation to the general ward two days after the disappearance of the membrane; this freedom from epidemics he attributed to the thorough ventilation which formerly existed.

Dr. WOLFENDEN referred to those cases of sore-throat resembling diphtheria which were due to infection with streptococci, staphylococci, or pneumonococci; and since these cases presented all the clinical features of diphtheria it was impossible to make a diagnosis except by bacteriological examination. He urged the necessity for Government arrangements for the distribution of cultivation tubes for the bacteriological investigation of suspected cases, and explained the American system.

Dr. ECCLES moved the following resolution: "That in view of the necessity for accurate diagnosis at an early stage of throat affections in order to effectually isolate and treat cases of diphtheria, a committee be appointed to draw up a memorial from this society to the Local Government Board urging the establishment of stations throughout the country for the bacteriological examination of inoculations from suspected cases." In urging its adoption he considered that such a resolution coming from this society of general practitioners would have more weight than that already presented by the British Laryngological Society.

Dr. JACKSON, in seconding the motion, referred to the influence of sewer air in preparing a suitable nidus in the throat for the development of diphtheria. He condemned the action of the vestries in allowing the ventilation of the sewers into the roadways, which, he pointed out, was directly contravening the Act.

Dr. ATKINSON raised an objection to the resolution in that it would increase the work of the medical officers.

Dr. ALDERSON gave the result of his personal experience in the treatment of diphtheria.

Mr. LENNOX BROWNE agreed heartily with the resolution. He considered that the amount of membrane in any case was

the essential factor towards a fatal result. In the event of the antitoxic treatment proving of value, he urged the importance of not neglecting local and dietetic treatment.

Dr. SEYMOUR TAYLOR regarded diphtheria as a general rather than a local disease, and considered that death occurred from asthenia rather than from suffocation. Tracheotomy was to be discountenanced in all cases of children under one year of age. He thought that the fauces must be prepared by tonsillitis, or by some form of inflammation, before inoculation with the bacillus can take place; he advocated the local application of salicylate of soda.

The discussion was adjourned to a special meeting to be held on Friday, Nov. 16th.

BRIGHTON AND SUSSEX MEDICO-CHIRURGICAL SOCIETY.

Exhibition of Specimens and Cases.—Anthrax Carbuncle.

A MEETING of this society was held on Nov. 1st, Mr. T. JENNER VERRALL, President, being in the chair.

Dr. A. J. RICHARDSON showed a boy three years of age who had never been able to walk or even sit up if unsupported. The child was born naturally, and the mother had had no other children or any miscarriages. She considered him to be intelligent; he knew people and answered simple questions, but there was certainly a long latent period. The child was quite clean in his habits. On holding him up with the hands placed under the axillæ exaggerated efforts were made at walking; the knees were brought up high with the toes dropping; the legs were moved quickly one after the other, with a sort of trotting action. Whilst doing this the head and arms were perpetually arhythmically moved, but this subsided as the child rested. An attempt to demonstrate the knee-jerks immediately after trying to make him walk seemed to show their presence, but at other times they were very difficult to elicit. There was no spastic condition of muscles.—Dr. W. S. HEDLEY read the notes of cases of Stiff Joints which he had treated by the Local Application of Hot Air, and he presented a patient who had been most successfully treated in this manner without any bandage for a sprained wrist.—Dr. CHEPMELL showed a patient with a Tumour in the Extensors of the Right Forearm. On forcibly flexing the forearm and hand it stood out prominently as big as a large walnut, but although feeling very much like fluid it was too soft to obtain marked fluctuation. With the arm extended it could be nearly entirely dissipated by pressure, and deeply between the muscles an aponeurotic ring could be felt, through which apparently the fluid flowed. A careful examination did not disclose any connexion with the elbow- or wrist-joints. It came on after severe manual labour. The general opinion was that it was an unusual form of teno-synovitis.—Dr. WHITTLE exhibited Microscopic Sections from an Ulcer of the Nose. The patient had had a sore place for ten years, which had been considered lupoid. It suddenly became worse and was excised and proved to be epitheliomatous.—Dr. BLACK read the notes of a case of Anthrax Carbuncle which he had successfully excised at the Sussex County Hospital. The patient had been employed in carting hay from the railway station, and on one occasion the truck was noticed to be smeared with blood. Subsequent inquiry elicited the fact that hides had been carried in the truck. The bacilli anthracis were found in the serous exudation from vesicles.—Dr. HOLLIS showed the Heart of a patient who when alive had suffered from Ulcerative Endocarditis; he had been under observation for four years. There was a large denuded area on the left auricle, and vegetations were found on the mitral valve.

WEST KENT MEDICO-CHIRURGICAL SOCIETY.

The Mode of Action of Iron and the Relative Value of its Salts in Anæmia.—The Uses of Sulphur in Surgery.

A MEETING of this society was held on Nov. 2nd, Mr. C. H. HARTT, President, being in the chair.

Dr. GEORGE HERSCHELL read a paper on the Mode of Action of Iron and the Relative Value of its Salts in Anæmia. Having first briefly reviewed the stimulative theory and Bunge's theory as to the action of iron upon the system, and having pointed out that they had both been refuted by Stockman, Dr. Herschell proceeded to discuss the changes which took place in different preparations of iron introduced into the stomach. He pointed out that theoretically the best preparation of iron was the nascent ferrous carbonate formed in the stomach itself by the reaction between sulphate of iron and carbonate of potash, and that the worst ones were the albuminates, peptonates, and colloid forms. In these latter preparations contact with the hydrochloric acid of the gastric juice produced a precipitate of insoluble ferric carbonate of iron. The alleged fact that these preparations were better borne in disease was evidently due to the fact that they were almost inert, certainly not undergoing solution in the stomach. Dr. Herschell then read an account of the comparative results obtained by administering different forms of iron to sixty-five out-patients at the National Hospital for Diseases of the Heart, Soho-square. In each case the amount of hæmoglobin was taken before beginning treatment and at the end of twenty days. Blaud's pill in tabloids gave an average daily increase of 1·2 per cent.; ordinary Blaud's pill, ½ per cent.; the sulphate, chloride, and ammonia citrate, ½ per cent.; albuminate, Flitwick water, and dialysed iron about ⅛ per cent.: thus proving, clinically as well as theoretically, that the ferrous carbonate was the best preparation. Dr. Herschell then demonstrated the method of using Fleischl's hæmometer.

Mr. ARBUTHNOT LANE then read a paper in which he explained the manner in which Sulphur was applied for Surgical Purposes. He used it for the destruction of micro-organisms which had effected an entrance into the living body by injury or disease. In the case of recent incisions or wounds made into vascular structures sulphur should not be left in contact with the part which it was desired to sterilise for a longer period than twenty-four hours. When the circulation of the tissues operated on was impaired it was frequently necessary to retain the sulphur for two, three, or more days. The application of moist heat assisted the tissues in breaking up the sulphur into sulphuric acid and sulphuretted hydrogen. When the surface to be treated was a granulating or ulcerated one sulphur might be applied at intervals till the surface healed or the cavity of which it formed the wall closed.

LIVERPOOL MEDICAL INSTITUTION.

Fœtal Ascites.—Acute Ascending (Landry's) Paralysis.—Enterectomy for Cancer.—Infectious Diseases (Notification) Act, 1889.

A MEETING of this society was held on Nov. 1st, Mr. CHAUNCY PUZEY being in the chair.

Dr. T. B. GRIMSDALE related the case of a woman aged thirty-four years who was confined of a child the subject of ascites and general dropsy, the mother herself suffering from general anasarca and albuminuria. Labour was difficult on account of the size of the fœtal abdomen, which had to be tapped. The mother recovered completely after delivery. The fact that the mothers, as a rule, recover was a strong presumption in favour of the disease being primarily a fœtal one, although an adequate fœtal lesion had seldom been found. In this case, however, Dr. Abram found numerous lymphadenomatous nodules in the liver and kidneys, and the cells of both these organs were markedly degenerated. The course of events in this case was presumed to be as follows: disease of fœtal liver and kidneys, ascites, hydramnios, and maternal nephritis.

Dr. CRAIGMILE read notes of the case of a woman aged forty-eight years in whom there was no suspicion of syphilis or alcoholism. On Sept. 19th, 1894, she had an attack of nausea and vomiting, from which she appeared to be recovering in a day or two. On Sept. 23rd she became dull and apathetic. On Sept. 25th she could only walk with difficulty, and was admitted into the hospital. On admission there was almost complete motor paralysis of the lower limbs, especially marked on the left side; sensation was only very slightly diminished. The plantar reflexes were exaggerated and the patellar reflexes were absent; no pain was felt anywhere; the muscles reacted readily to the interrupted current. From the time of admission she passed urine and fæces involuntarily. The left arm next became paralysed and the left sterno-mastoid muscle. The right half of the chest acted better than the left. On Oct. 5th she had difficulty in swallowing, and the breathing and pulse became

more and more feeble, until she died on the following day, the ninth after the first signs of paralysis. While she was in the hospital the temperature varied from 98·6° to 103·4° F., but with no regular rise or fall. There was no tendency to bedsores. The rise of temperature was an unusual feature in this case, and, as a rule, the sphincters were not affected or the plantar reflexes exaggerated in Landry's paralysis; otherwise this case resembled the recorded ones. Inquiry was made as to the possibility of a dog-bite, but with negative result. No post-mortem examination could be obtained. —Dr. CARTER said that, if possible, pure cultures from the spinal cord and subsequent injection of animals should be made in these cases.—Dr. BARR said that, although acute general peripheral neuritis closely resembled Landry's paralysis, there were well-marked clinical symptoms to distinguish the two. Landry's paralysis was confined almost exclusively to the motor tract, sensation remaining more or less perfect to the end. The paresis commenced in the lower extremities, and the electrical reactions remained intact. It occurred chiefly in males, and was, no doubt, due to some toxine. Acute general peripheral neuritis occurred chiefly in women, the paralysis was very pronounced, the electrical reactions were altered, and there was generally intense pain in the limbs, with marked paræsthesia.

Mr. BANKS related a case of Enterectomy for Cancer which terminated fatally.

Mr. NEWBOLT showed a man who had suffered from Bony Angular Ankylosis of both Knee-joints after Double Excision; the patient was now able to walk well.

Dr. STEEVES said that the Infectious Diseases (Notification) Act, 1889, came into force on Jan. 1st, 1890. An infectious hospital for the Toxteth Park urban district was soon completed with accommodation for fifteen beds and over 2000 cubic feet air-space per bed, disinfecting apparatus, refuse destructor, and laundry machinery. Provision for a mortuary and an ambulance van had been made by the local authority. Dr. Steeves then referred to the rapid increase in the population of the district. He gave statistical tables of the three years before notification was in force, and of the three years which followed its adoption. These tables gave comparative averages as regarded death-rate, birth-rate, and zymotic death-rate, infectious diseases notified, infectious cases removed to hospital, houses and bedding disinfected, and nuisances abated. He then gave a general description of the sanitary condition of the district, and said that many nuisances injurious to health were abated by reason of the notifications received. He was doubtful as to the expediency of retaining erysipelas on the list of notifiable diseases, and thought it advisable to include measles.—Dr. CARTER thought that the diminution in the death-rate from zymotic disease might be attributed to the general improvement in sanitary matters. The working of the Notification Act in their neighbourhood was greatly facilitated by the fact that the removal of the patient was left to the discretion of the medical man in attendance.—Dr. HARVEY believed the Act had had the effect of arousing an interest in the average householder, and especially among the working classes, in regard to sanitary matters and to the importance of isolating and preventing the spread of infectious diseases. It had also enabled the medical officer of health to discover insanitary conditions which might otherwise have escaped attention. He thought it had distinctly diminished the mortality from scarlet fever in his district.—Dr. LOGAN was of opinion that the notification of whooping-cough was much more important than that of measles.—Mr. PAUL, Dr. BARR, and Dr. A. DAVIDSON also took part in the discussion.

Mr. GEORGE HAMILTON showed some new Instruments.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.

Exhibition of Cases.—Oöphorectomy for Uterine Fibroid.—Hæmato-salpinx.—Kopftetanus treated with Antitoxin.

A MEETING of this society was held on Oct. 25th, Mr. MAKEIG JONES, President, being in the chair.

Mr. SNELL introduced: 1. A woman with a large defined swelling of the conjunctiva, ulcerated in the middle, but with little or no discharge. It was now rapidly subsiding under iodide of potassium. There was an enlarged pre-auricular gland. It was suggested that the swelling was a gumma. 2. A male aged twenty-four years with Congenital Amblyopia. The discs were white and there was colour blindness. Two brothers and two sisters were similarly affected.

Mr. PYE-SMITH showed the case of Tumour of the Palate in a woman which had been before the society last February. He had removed the growth together with the hard palate and the right alveolar process eight months ago and there was no sign of recurrence. Mr. Pye-Smith also showed a man on whom he had recently performed Anterior Colotomy for Malignant Disease of the Rectum.

Dr. KEELING gave particulars of a case of Oöphorectomy for Uterine Fibroid.

Mr. RICHARD FAVELL related a case of Ruptured Tubal Gestation in which he had performed abdominal section. Menstruation had been regular since the birth of her youngest child, now three and a half years old, until last August. She then went three days beyond her time, when there developed suddenly a discharge of blood which lasted a few hours. Recurring five days later, it persisted up to the time of rupture. The discharge was stringy at times, but no distinct decidual membrane was passed. There was no milk in the breasts. Spasmodic pains in the lower part of the abdomen were frequent. On Sept. 16th, seven weeks after the last normal period, she was suddenly seized with acute pain, becoming pale and collapsed, with rapid breathing, very quick pulse, and subnormal temperature. The abdomen was enlarged and very tender. There was a slight discharge of blood from the vagina. The cervix was soft and patulous; there was no bulging in either fornix. The pulse was 160. On opening the abdomen a large quantity of fluid blood and clots gushed out. The rupture was found on the anterior border of the left Fallopian tube close to the uterus, the embryo being recognised in the clot. Blood and blood-clots were cleared out, and the peritoneum was washed with saline solution. The patient made a good recovery. Mr. Richard Favell also related a case of Hæmato-salpinx. The patient suffered from pelvic pains for three months and a discharge of blood which continued up to the time of the operation. The right Fallopian tube was distended with blood-clot to the size of a Tangerine orange. No microscopic examination had been made as yet of the clot, but the case was probably one of tubal gestation.

The PRESIDENT read brief notes of a case entitled "Kopftetanus treated with Antitoxin—Recovery."

Mr. Chas. Atkin, Dr. Martin, Dr. Samson Mathews, and Dr. Wilkinson took part in the discussions.

GLASGOW OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

The Honorary President's Address.

DR. ROBERT BARNES, the honorary President, was entertained to dinner by the society on the evening of Nov. 2nd, and afterwards delivered an address. After thanking the society for the honour conferred upon him he made a few remarks on the unity of medicine. He showed how general and special medical science had suffered from the subdivision of medicine into sections represented by special colleges and societies constituted and acting to the neglect of obstetrics and gynæcology. In the metropolitan hospital schools the position of the obstetric and gynæcological surgeon was formerly one of toleration rather than one of inherent right. A better spirit was now beginning to prevail. He then took up the subject proper of his address on General Physiology and Pathology, illustrated by the Study of Menstruation and Gestation. He said that two leading forces were produced by gestation. The first was the starting of exalted nervous and vascular tension attended by certain changes in the blood. A rapid development of tissue and a general increase of glandular energy were witnessed. The second—viz., that of absorption and lactation—came into play at the ending of gestation. He then dealt with hæmorrhage during labour and the subsequent lochial discharges. These discharges were strictly physiological and marked the first step in the restoration of the single circulation which followed the casting off of the embryo. The excess of the circulating blood was thus got rid of, but if the loss exceeded the physiological need the force of absorption was accentuated; a vacuum force was thus added, which favoured the sucking in of any fluid from the genital and intestinal canals and of any aerial matter existing in or brought to the lungs. This was the principal factor in producing puerperal septicæmia. The two before-mentioned forces tried the integrity of all the tissues and revealed any

defects in them. He dwelt upon the opportunities for physiological observations which would be afforded by experiments upon animals during gestation. A marvellous transformation was wrought in every part of the organism. Every part felt the new impulse. Every function was doubled. In healthy gestation an exact equilibrium was maintained between the wants of these two organisms, but at times the maternal organs were overtaxed, physiological action passed into pathological processes, and changes in structure took place, the predominant force of the circulation being constructive, excentric, and disposed to exudation and hæmorrhage. Increased secretion of urine, saliva, and other mucous discharges moderated the vascular tension, but if these failed to maintain the equilibrium serous effusions into the cavities, the cellular tissue, and even the parenchyma of organs, or external hæmorrhages from the nose, lungs, stomach, or intestines took place, and abortion might thus be averted. When abortion did occur it might be regarded as a conservative event. When these safety routes failed, internal hæmorrhages—e.g., into the brain—might occur. This clearly taught us to relieve physiological plethora either by venesection or by terminating the pregnancy. Dr. Barnes next drew attention to the fact that the mucous membrane of the vagina and rectum showed deep congestive desquamation, which corresponded with the deepened areola and the secretion of milk. He might fairly conclude that similar conditions existed in the mucous membrane beyond our sight. This was certainly true of the kidneys, as epithelial scales were frequently, and albumen occasionally, found in the urine without any organic changes in the kidneys. This was due to high arterial tension, which, if too long sustained or too frequently repeated, caused persistent albuminuria and change of tissue. Jaundice and diabetes arose and disappeared with pregnancy, which showed they were not due to organic changes. Temporary diabetes had been called "physiological glycosuria." It had long been known to students of the phenomena of pregnancy. He himself had known several women who had had diabetes in every pregnancy, and only then. This illustrated the trial of the system by high tension, and the disturbance of the balance between secreting and excreting organs. Albuminuria, jaundice, &c., had too often been put down as due to inflammation. Dr. Barnes next took up "physiological plethora." The blood increased in volume, and was more coagulable from increase of fibrin. The heart was hypertrophied, and probably the nervous centres were coincidentally hypertrophied, although this had not yet been proved. From this history of physiological plethora and growth the evolution of tumours might be traced, as well as organic hypertrophy of the heart and some cases of valvular disease and phlebectasis. The origin or constructive stage pertained to gestation. The transition to the pathological stage mostly set in in the post-puerperal period. Owing to some constitutional fault or to causes interrupting the due course of involution, the redundant tissue remained and formed the bases of hyperplasia, hypertrophy, or tumour. In the glandular phenomena he instanced the normal swelling of the thyroid gland in young married women as a proof that goitre is essentially a result of high arterial tension. Might pigmentation of the abdomen and face be due to increased activity of the supra-renal capsules? The study of the nervous phenomena of pregnancy went far to elucidate some forms of nervous disease unconnected with pregnancy. In his Lumleian Lectures he had emphasised the fact that these affections might long lie dormant unless evoked by some incidental cause. Menstruation and pregnancy yielded many instructive examples of this: chorea apparently cured in infancy was apt to recur when menstruation and pregnancy set in; hysteria and insanity which had long resisted general treatment were often relieved when the provoking disorders of the genital organs were removed. These cases were frequently seen at the climacteric period. Dr. Barnes dealt very fully with the second great force evoked after gestation had been accomplished. There was a sudden fall of tension and a substitution of absorption for construction. The tide turned from the periphery to the centre, and a new seat of activity was developed, the secretion of milk. The effete tissues were thus got rid of. When lactation was hindered the organs lost their proper mode of relief, the process of fatty metamorphosis was interfered with, involution was hindered, and physiological hypertrophy passed into pathological hyperplasia. In this way we might trace the origin of tumours of the homologous type. Fatty metamorphosis and elimination gave way to fatty degenerations. This was the history of many cases of fatty heart, fatty liver, and Bright's disease. Enlarged heart was apt to persist when lactation had been interrupted. In 1851 he had described fatty and calcareous degeneration of the placenta. In pregnancy calcareous deposits were found in the cranium as well as in the placenta. These were probably part of the ossific material prepared for the building up of the fœtal skeleton. Dr. Barnes then touched upon the therapeutical application of the forces of gestation. He pointed out that atrophy was apt to occur when the processes of absorption were carried to excess. He concluded by summing up the main points set forth. 1 Gestation and menstruation, regarded as a natural experiment, throw the clearest light upon the origin, essence, and treatment of many diseases. The study of pregnancy and puerpery brings before the observer the most striking example of the working of the great forces of exalted nervous and vascular tension in the production of new tissue. 2. The converse force of active absorption. 3. The influence of hæmorrhage. 4. The influence of blood changes and metabolism.

Reviews and Notices of Books.

Heart Studies, chiefly Clinical. I. The Pulse Sensations: A Study in Tactile Sphygmology. By WILLIAM EWART, M.D Cantab., F.R.C.P. Lond., Physician to St. George's Hospital &c. London: Baillière, Tindall, and Cox. 1894.

THE comparative neglect of the tactile in favour of the instrumental investigation of the pulse and the desire to bring the former up to date are the motives which have prompted Dr. Ewart to undertake the study the outcome of which we have in the volume before us. It is not long since we had an opportunity of considering Dr. Chapman's Goulstonian Lectures,[1] in which he lamented the comparative neglect of the instrumental method. It is not difficult to reconcile these apparent contradictions, for, although the majority of physicians have scanned the delineations of recording instruments with a considerable amount of scepticism, they have been content to acquire from the tactile method certain broad results as to the volume, rate, and consistency of the pulse. The book before us endeavours to carry us further. The author's task is not an easy one, and he does not underrate its difficulty. The hero of the book, if we may use the expression, is Fouquet, a very good reproduction of whose portrait at Montpellier forms the frontispiece. Of Fouquet, and others, Sir William Broadbent, in his book on the Pulse, published no longer ago than 1890, remarks that their "fantastic descriptions had no reference to the physiology of the circulation, and might more easily have been written before its discovery." Dr. Ewart thinks otherwise, and believes that the future will be found to agree with him. After reading his careful account of Fouquet's observation we incline to the opinion that, erroneous as some of his conclusions were in the light of present knowledge, we have in him to recognise a lost pioneer. In examining this work the central fact—if fact it be—which has to be accepted is that the ictus or beat felt by the finger in examining a pulsating vessel is identical with the summit of the pulse wave as displayed in the sphygmogram. This conceded, we are led to believe that we may by feeling the pulse come to valuable conclusions as to its nature, relative time, and direction. While studying the matter from this point of view, however, Dr. Ewart has not failed to avail himself of the assistance to be obtained from the conclusions of instrumental investigation, and has drawn largely upon the work of von Frey and von Kries. As a result of his own studies and his interpretation of the phenomena of sphygmography, he records his adhesion to the peripheral theory of the pulse wave, according to which the "configuration of the pulse tracing arises from the conjunction with the systolic wave of a series

[1] THE LANCET, March 3rd, 10th, and 17th, 1894.

of rebound waves, *the first of which is reflected from the periphery*." In this connexion he records an interesting observation upon a case of superficial ulnar artery, in which, of three indicators erected on its course, the one nearest the wrist was observed to rise first. We have no reason to doubt the correctness of this observation; but we cannot forget the great velocity of the blood current, and the fact that the excursus of a vibrating structure or pulsating tube is greatest in its finest or most distant portion, unless the latter be tied down in a manner which did not obtain in the case of the artery in question. It is to some extent a corollary to this peripheralist conclusion that vascular changes usually attributed in a considerable measure to gravitation, as when the arm is raised overhead, should be set down to a stenotic stretching and compression of vessels. Dr. Ewart enters interestingly and at considerable length into a consideration of the radial anastomotic pulse—that is, of the pulsation felt by the distal side of the examining finger and communicated by way of the palmar arch of the ulnar artery by anastomosis. He appears to have frequently met with and easily determined the radial anastomotic pulse, although more frequently in adults than in children. He also observes that, "in spite of its longer journey and of all retarding influences, the anastomotic pulse commonly gives to the obliterating finger an earlier stroke than that communicated to the proximal side of the same finger by the ordinary descending pulse," and further, that the "rebound from the hand is identical in direction with the pulse wave in its radial course." It may be that the increased celerity of fluid passing through a narrower tube may be accountable for the former phenomenon, and the free exit through the digital branches of the arch for the other; but we confess that, when in the determination of a priority of events we are advised to fix our attention on one to the exclusion of the other, there are sources of fallacy in observation which we would indicate with all due respect. Doubtless practice in such a matter might lead to exalted sensibility; but the possibility of error in so fine a time perception by the unaided hand would, we believe, be difficult to eliminate. In investigating such and other practical points Dr. Ewart gives some useful hints as to feeling the pulse. His "great rule" is, "never use more than one finger to the pulse except for special objects," and to a neglect of this rule he thinks much of the backward condition of tactile sphygmology is due. His suggestions for thus estimating the degree of pulse tension, which (with pulse-rate and size) is, after all, the main object in feeling a pulse at all, are wise and convincing, and we can thoroughly endorse their practical value. If in our comments we should not appear to be quite at one with the author on all points we can aver that the perusal of no recent work in this department of medicine has afforded us so much pleasure. We can thoroughly recommend it to the student-tyro and the student-expert alike. Finally, it is more than a mere record of physical perceptions and practical hints. It is indicative of careful thought and correct and scholarly acquirements. It is, moreover, lucid in method, easy to read, and all that could be desired in production.

A Manual of Practical Medical Electricity. By DAWSON TURNER, B.A., M.D. London: Baillière, Tindall, and Cox. 1893.

THIS is an eminently readable book, dealing in a sufficient manner, and at the same time clearly, with the whole range of the subject of which it professes to treat. Unlike many of the pseudo-scientific treatises with which medicine has been endowed of late years, it is far more than a compilation. The author has conscientiously studied the literature of medical electricity and has assimilated what he has read, but there is also no doubt that he has devoted his individual attainments also to his work, and the reader thus feels the agreeable assurance that the statements which are commended to his belief rest upon the experience of a competent witness. The advantage of this is very great. It implies a habit of mind on the part of the writer which enables him to dispense with complications; and by having his own purpose clearly before him he succeeds, as few others have done, in simplifying a very difficult subject. It is, of course, impossible to present within the compass of a text-book a complete knowledge of the principles upon which medical electricity must base its claim to be considered a branch of scientific treatment. A judicious selection is the most that can be asked for. This Dr. Turner supplies, and he lends to it the force of an authoritative teacher. The title of the manual is fully justified, for the book is certainly practical. It is addressed to a class already overburdened with the necessity of learning in a multiplicity of directions and with a minimum of spare time. This is borne in mind throughout, and the intelligent reader cannot fail to be attracted and led on, as opportunity serves, to acquire a deeper and a wider knowledge of electricity.

Those portions of the work which are essentially practical leave nothing to be desired. We may instance especially the chapters which treat of the Nature of Cells and the Management of Batteries. The author may seem to have been unnecessarily diffuse in his remarks upon current strength and upon the measurement of this and of resistance in the development of Ohm's law; but none of this matter is superfluous. The intelligent use of medical batteries depends, more than on anything else, upon a firm grasp of the principles involved, and the practitioner will find his chief encouragement in understanding them. But the remarks on electro-physiology are somewhat sketchy.

The portion of the book which is devoted directly to electric diagnosis and treatment deserves every praise. There is nothing here very new to comment on. The best authorities are closely followed, and where a difference of opinion arises the author is found to have made his choice, and generally to support it well. Anyone who desires to be instructed in the appropriate treatment of a particular disease, or as to the choice of instruments and procedure in a case for surgical interference, will find in these pages a concise and faithful guide. We are glad to note that Dr. Turner has a word of warning concerning the rash advocacy by enthusiasts of electrolysis as a treatment of urethral stricture. A warning of this kind should be heeded. The illustrations are good and helpful, and the work reflects credit on the publisher as well as the author.

Ambulance Lectures: First Aid to the Injured. By SAM. OSBORN, F.R.C.S.Eng., Chief Surgeon of the Metropolitan Corps of the St. John Ambulance Brigade; Lecturer and Examiner to the St. John Ambulance Association; Surgeon to the Hospital for Women, Soho-square. Third Edition. London: H. K. Lewis. 1894.

AMONG the numerous handbooks on the subject of first aid in cases of accident Mr. Osborn's holds a prominent position. The approval of authorities in high places is sufficiently evidenced by H.R.H. Princess Christian having graciously permitted the dedication of the work to her, and the public estimate of its merits is shown by the call for this third English edition and the appearance of translations into French, German, Italian, and Japanese. Mr. Osborn's style is clear and plain—two essential requisites in a work of this kind—and the technical information is imparted progressively, so as to be easily understood by an attentive reader of average intelligence. Chapter I. gives a brief description of the structure of the body, with some account of the functions of respiration and the nervous

system, and the varying effects of injuries of the latter according to the situation of the lesion. Chapter II. is devoted to the circulation. There is a short but lucid account of the physical constituents of the blood, and of the structure and action of the heart, arteries, and veins. This is followed by a careful description of the position and course of the principal arteries from the aorta to the palmar and plantar arches, reference being everywhere made to a coloured diagram. It is somewhat unfortunate that, while the text (p. 25) is precise as to the separate origin of the left carotid and left subclavian from the aorta, in the diagram they appear to have a conjoint origin similar to the innominate. Then come illustrations showing where arterial compression may be most suitably applied, together with the various ordinary and extemporised means of arresting hæmorrhage. Chapter III. treats of wounds of various kinds, foreign bodies in the eye and ear, injuries of joints, fractures, and the application of splints. Chapter IV. describes the treatment of shock resulting from injury, insensibility from apoplexy, intoxication, &c., fainting, stings of insects, drowning, choking, burns, and poisons. Chapter V. shows the best means of lifting and carrying the sick or injured, whether by the hands and arms only, or with the aid of stretchers. Various kinds of stretchers, litters, ambulance carriages, and chairs are here figured and described. Chapter VI. contains such instruction in surgical nursing as an untrained person acting on an emergency might be capable of putting in practice. Having carefully perused this little book, we consider that the author has produced an admirable manual, full of accurate and suggestive information, and in every way well adapted to its purpose. Its value is enhanced by the numerous and excellent engravings.

LIBRARY TABLE.

Index Pathologicus for the Registration of Lesions recorded in Pathological Records. By JAMES C. HOWDEN, M.D. London: J. & A. Churchill. 1894.—This is a thin folio of about ninety pages, with a column of lesions on the left of each page and opposite to them blank spaces for the insertion of the volume and page of the case-books or other records in which such lesions have been noted. Dr. Howden's long experience has proved to him the advantages of this method of presenting almost at one view a convenient and ready means of reference to pathological observations scattered throughout numerous volumes of records. The system is ingenious and certain to be useful where there are a great wealth of material and observations extending over some years.

Physical Culture for Men, Women, and Children (Ling Swedish System). By A. E. TANNER. London: Simpkin, Marshall and Co. 1894.—The athletic exercises described by Mr. Tanner are intended for home practice, and do not require any special or elaborate apparatus. The systematic daily performance of them will unquestionably benefit both those whose tendency is to neglect healthful exercise and those whose pursuits develop certain regions of the body disproportionately to the remainder. Most of the exercises are quite simple and easy; others, such as the evolutions performed while the body is supported only by the hands resting on the backs of chairs, will require no small effort on the part of many persons. The facility with which these movements may be learned and practised is a great recommendation, and nothing can be better for those inclined to round shoulders, shuffling gait, "cyclist's stoop," and many other ungainly motions and attitudes. The author claims in addition for these exercises an important beneficial effect on the digestive and respiratory organs as well as the muscular and nervous systems. The title is perhaps too comprehensive; the work, however, is clearly written and fully illustrated.

On Preservation of Health in India. By Sir J. FAYRER, M.D., F.R.S., K.C.S.I., President of the Medical Board at the India Office. London and New York: Macmillan and Co. 1894.—This little volume is not a medical text-book, but the substance of a lecture delivered to the students of the Cooper's Hill College. Personal habits in India more than in temperate climates form the chief factor in the preservation of health. Sir Joseph Fayrer considers that those who are careful in this respect and of good constitution may return to England after long residence in India able to enjoy life and to work as well as others of a like age. His principal injunctions are temperance in all things, the constant wearing of woollen garments next the skin, avoidance of the direct rays of the sun and miasmatic localities, early rising, moderate but regular eating, and very sparing use of alcohol and tobacco. Protection against the sun is afforded by a good hat of pith or other light material, with a *puggrie*, a white umbrella, and a pad of cotton twelve or fourteen inches long over the spine. The so-called cholera belt or band of flannel worn round the body is sometimes a valuable resource against sudden chills. Drinking water should always be passed through an ordinary but very clean sand or charcoal filter, and it is well to boil it. Cold bathing in the morning is recommended, but too much bathing should be avoided, and the warm bath is not a good daily habit. In the closing part of the book there are short references to malaria, cholera, dysentery, liver disease, hæmorrhoids, and snake bite. Sir Joseph Fayrer's long medical experience and thorough knowledge of India guarantee the soundness of his recommendations.

New Inventions.

IMPROVED THERMO-CAUTERY.

THE improvements in this instrument, which have been carried out at my request by Messrs. Weiss of Oxford-street, will, I am sure, be appreciated by all who are in the habit of using it. They are as follows:—1. A new bottle for the benzoline, which makes it impossible to spill this highly inflammable fluid, no matter how often the bottle is upset. 2. A new bayonet catch over the rubber cork, which prevents the latter from coming out while pumping the benzoline vapour, which formerly was a constant occurrence. 3. A new arrangement of the handle makes the instrument an artist's tool and enables the surgeon to hold it quite close to the point, as he would a pencil, so that the touch can be exquisitely delicate when required, which was not possible with the old handle. Owing to these improvements, together with a forced draught in the

handle, an ounce of benzoline will enable the operator to heat the cautery in half the time and keep it alive with very little pumping. I trust these improvements—the outcome of practical discomfort in the use of an otherwise most valuable instrument—may be found useful by my fellow workers.

ROBERT O'CALLAGHAN.

Harley-street, W.

VAPORISERS.

"POUNDS' INTERNATIONAL VAPORISER," as it is called, is a simple and cheap device for the steady vaporisation of carbolic acid and other agents for general disinfecting purposes. It consists merely of an iron ring support containing a shallow tray, beneath which a night-light is placed. A similar and equally simple arrangement accompanying the above is a light brass tripod, which fits loosely upon a gas-burner, so that the gas flame may be substituted for vaporising the fluid. The inventor, Mr. H. W. Pound, Woodside Park Pharmacy, North Finchley, recommends for this purpose a mixture of fluids which he calls "carbopicine," containing gas-tar (phenols), wood tar (creasote), and eucalyptus. It gives off a powerful but not disagreeable vapour, which doubtless serves as an effective aerial disinfector for the sick-room and other places.

Another device, but more adapted for the diffusion of bodies like eucalyptus—which are carried off in the steam issuing from hot water—is due to Mr. Wilson of 25, Wigglesworth-road, New Cross-road. It consists essentially of a cage having three divisions or floors, the middle one serving to contain a reservoir for the boiling water with the volatile disinfectants, and the top division to receive a ring of cloth saturated with the same disinfectant, while in the lower division a heater is placed, which is simply a block of dense charcoal impregnated with a modicum of an oxygenated salt, which promotes the steady and complete combustion of the carbon. The vaporiser is started by filling the reservoir with water, to which eucalyptus oil is added in the proportion of one ounce of oil to a pint of water. The charcoal block is then placed for a few minutes in the bright part of a fire until it is dull red-hot. It is then placed in the recess provided under the reservoir, by which means the liquid gradually approaches and keeps at a gentle simmer, the fragrant smell of eucalyptus being given off in the issuing steam and pervading the whole air of the room. The carbon block is a novel and important feature in the apparatus, since, while it does its work well, it is safer and more convenient than a naked flame and continues to keep up the heat of the water for over eight hours, at the end of which time nothing remains but ash. The tendency, however, of glowing charcoal to give off noxious gases, carbon monoxide being the chief constituent, would be, we conjecture, an objection to this means of heating, especially as the apparatus is designed for the use of invalids, to whom, indeed, it is likely to be of good service. But on aspirating the products of combustion into a bottle and submitting them to a series of delicate tests we obtained no evidence that such was the case. The risk of imperfect products being formed is, of course, minimised by mixing chlorate or a similar oxygen-yielding body with the charcoal. The apparatus is an efficient vaporiser of readily volatile bodies and with ordinary care is as safe and convenient to use as a night-light.

A NEW BONE-CUTTING FORCEPS.

IN operating upon the skull and spinal column great difficulty and delay are constantly experienced in removing portions of the bone with the various kinds of forceps and chisels at present in use. To obviate this Messrs. Down Brothers have made for me several forms of cutting forceps, one of which is illustrated in the accompanying diagram, from which the mechanical principle upon which this instrument is constructed can be readily gathered. As far as I am aware, the principle is an entirely new one as applied to surgery, and it is one which enables the operator to remove bone, however dense and hard, with such rapidity, safety, and ease as cannot be approached by any other surgical instrument. The instrument is seen to consist of two blades moving on one another around a transverse axis. The proximal blade ends in a deeply serrated surface, which rests upon the bone immediately beyond the portion which is to be removed. It acts as a fulcrum around which the forceps move in a vertical plane when the handles are approximated and depressed. The distal blade is claw-shaped, presenting a sharp cutting edge. This is introduced beneath the piece of bone which the surgeon intends to remove, and when the

handles of the instrument are forcibly approximated and depressed this sharp edge tears through the bone with such an amount of power as can be readily understood from the fact that the length of the short arm of the lever, which is one of the first order, corresponds to the varying, though always narrow, interval which exists between the ends of the two blades when in use, while for practical purposes the force that can be brought to bear upon the long arm is unlimited.

W. ARBUTHNOT LANE.

St. Thomas's-street, S.E.

A TUBE FOR THE INTRODUCTION OF IODOFORM INTO THE UTERUS.

IN a scattered country practice frequent syringing of the uterus in puerperal cases with foul discharge is almost impossible; it has therefore occurred to me that some benefit might be obtained by the introduction of iodoform into the uterus after each syringing. With this view Messrs. Down Brothers have devised for me a little instrument. It consists of a bent vulcanite tube having within it a piston with flexible

rod, shown in the figure by dotted lines. That portion of the tube between A and B is of just such capacity that it will hold a British Pharmacopœia iodoform suppository. The constriction at A prevents the rod from being drawn too far out and so allowing the suppository to become jammed in the angle of the tube. The price is small—I believe only 4*s*.

Morchard Bishop, North Devon. G. A. H. BARTON.

ROYAL MICROSCOPICAL SOCIETY.—A meeting of this society was held on Oct. 17th, the Rev. Edmund Carr in the chair. Dr. W. H. Dallinger, F.R.S., described a new model microscope which had been made by Messrs. Watson. Messrs. Ross exhibited examples of their "Eclipse" microscopes. Mr. R. T. Lewis exhibited some Parasites which had been found upon a Penguin from Isipingo, Durban. Dr. H. Stolterfoth's paper on the Genus Corethron was read by Professor Jeffrey Bell. Mr. E. B. Green read a paper on Some Parasitic Growths on the Root-hairs of Plants; Mr. A. W. Bennett made some remarks on Mr. Green's paper. Professor Bell called attention to the loss the society had suffered by the death of Dr. G. E. Blenkins, a former secretary. Mr. F. Chapman gave a *résumé* of part of his paper on the Foraminifera of the Gault of Folkestone. The Chairman and Professor Bell made a few remarks on Mr. Chapman's contribution. Owing to the absence of Mr. Nelson, his paper on the Measuring of the Refractive Indices of Various Media was deferred to the next meeting on Nov. 21st.

THE LANCET.

LONDON: SATURDAY, NOVEMBER 10, 1894.

THERE were some signs of returning animation among the Members of the Royal College of Surgeons at the annual general meeting of Fellows and Members, which was held on Thursday, the 1st inst.; but these signs were fitfully exhibited, and at one moment were obscured altogether through a strong tendency to relapse into that comatose condition from which THE LANCET has been endeavouring to arouse this great constituency. Mr. JOSEPH SMITH had given notice of the following resolution: "That this meeting is of opinion that the resolution which has so frequently been passed by large majorities at meetings of Fellows and Members—namely, that Members of the College should have some voice in the election of members of the Council—be approved, and that the President and Council be respectfully asked to give effect to such resolution."

When this notice of motion had been received by the President it was pronounced to be not strictly in order, as not pertaining directly to the business of the meeting—viz., the reception of the annual report,—and the secretary was instructed to write to Mr. J. SMITH to that effect, at the same time adding that he would be allowed to move it on the present occasion, some latitude having been permitted at previous meetings. Mr. J. SMITH did not take any immediate step in consequence of this letter, but proceeded to introduce his resolution in what promised to be a temperate and relevant speech, notwithstanding the repetition by the President of the main contention in the letter received by Mr. J. SMITH. Suddenly, however, Mr. J. SMITH interrupted his arguments, read the letter to the meeting, and announced to his astonished auditors that he should best consult the dignity of the Members of the College by declining to proceed on sufferance and would withdraw his motion. This course of action did not commend itself to Dr. ALDERSON, who had come down to second the resolution, or to the majority of the Fellows and Members present, and when the meeting was asked to sanction the withdrawal of the motion the sanction was refused. The result was that Dr. ALDERSON took charge of the resolution, and proposed it in the following modified form: "That this meeting is of opinion that the resolution which has so frequently been passed almost unanimously at annual meetings of Fellows and Members—namely, that Members of the College should have some voice in the election of Members of Council—be approved, and that the Council be respectfully asked to give effect to such resolution by giving a certain portion of its deserving Members a seat on the Council." Mr. MEAD seconded the resolution, which was supported by other speakers, and carried by 25 votes to 8. The supporters of the resolution laid particular stress on the obligations of the College to the Members from a financial point of view, as evidenced in the annual report, and stated that the Fellows would lose nothing by conceding a few seats on the Council to the Members of the College. The President demurred to the statement that the Members of the College were not represented on the Council on the ground that every Fellow is a Member of the College, and that every member of the Council represents both Fellows and Members; but such arguments are not, we think, very persuasive, and their effect was entirely lost when Mr. THOMAS SMITH remarked that it was impossible for the Council to confer representation on the Members without a mandate from the Fellows, by whom the Council is elected. He spoke as if that which was given to the Members would be taken away from the Fellows, but this is a misapprehension. The simplest solution of the Members' representation question would be the addition to the Council of a certain number of representatives of the Members, following the example which was set with regard to the representation of the great body of practitioners on the General Medical Council, and the example set also by the Faculty of Physicians and Surgeons of Glasgow. This solution is so simple and so little provocative of opposition from the Fellows that we feel sure that if the Council were to suggest it to the Fellows as a step desirable in the interests of the College the Fellows as a body would willingly accede to it.

The obvious policy for the Members of the College to pursue is to persevere in the assertion of their just claims. To succumb to a pronouncement even from the chair that a resolution reaffirming the desirability of according representation to the Members is out of order at an annual meeting is to play into the hands of those who are opposed to the concession of any measure of reform. The special need of the Members is organisation, for without organisation their claims cannot be urged with the perseverance and force which would carry them to a successful issue; nor can the effect of divided counsels be adequately counteracted, or the tendency in some quarters to indulge in fault-finding in regard to matters of detail be discountenanced. At the last annual meeting a Member of the College had proposed to move that the meeting could not consent to having larger disciplinary powers conferred on the Council until the Members of the College had been granted their proper share in the government of the institution. The motion in that form was considered to be out of order, as the consent of the meeting was not asked, and it was suggested that he should use the words "approve of" instead of "consent to." The acceptance of this slight modification would not have injured the motion, but the Member who had given notice of it preferred not to move it at all, on the ground that he was not going to be dictated to as to the terms of any motions he wished to propose. A spirit of this kind is a spirit of impracticability which stands greatly in the way of progress and blocks the path of reform for Members of the College. This spirit was evinced in the withdrawal of Mr. JOSEPH SMITH'S resolution, and in the minority vote of six in opposition to the resolution of thanks to the Council proposed by Surgeon-Major INCE. It is this spirit also which makes it difficult for the Fellows and members of the Council who sympathise with the Members to endeavour to give effect to their convictions by pressing forward the claims of the Members to be represented on the Council.

THE present position of things at the Chelsea Hospital for Women is one that cannot be otherwise than unsatisfactory

but at the same time we are prepared to congratulate all concerned upon their resolute intent to place things upon a proper footing. The Board of Management has resigned, and we understand that a meeting of Governors will be held at an early date to elect a new Board. This step is exactly in accord with our oft-expressed opinion of what is right, and to make this clear, at the risk of repetition, we propose to set forth why. We have said from the beginning that the Board of Management did not seem to appreciate the measure of its offence in having clung to office after it had incurred the censure of a strong and impartial Committee of Inquiry. Clearly, in the presence of that censure, the only proper course was to resign immediately, and leave the way open for others to come forward and take up the duties which the old Board itself stood guilty of having neglected. The Board did nothing the kind. It made comparatively light of the censure of Lord BALFOUR'S Committee of Inquiry and forthwith set about electing a new medical staff. It is generally, and we believe with some reason, supposed that the resignation of the former medical staff was not absolutely spontaneous, but that it was decided upon, to some extent at least, at the instigation of the Board of Management with a view of making the task of setting the hospital right with the public an easier one. However this may be, if the resignation of the medical staff was necessary for that purpose, equally necessary was the resignation of the discredited Board of Management. We hold, and have held, no brief for those who failed to secure re-election; our contention has been from the first that the Board made a grave mistake when it determined to remain in office and exercise the function of electing a new medical staff. Any staff so re-elected must be placed in an impossible situation.

Nothing, again, could well have been more likely to make bad worse than the Board's ill-advised way of setting about this election. As Mr. HUTCHINSON says, in his letter to Dr. FENTON, published in THE LANCET of the 3rd inst., it acted precipitately and without any proper consultation with the consultants or any other professional body. In the course of the same letter Mr. HUTCHINSON expresses the opinion, which we cordially endorse, that it was quite impossible that a lay committee without professional guidance, and meeting hurriedly as it did, should make a judicious selection from among the candidates. The Board was doubly in the wrong. Firstly, it should not have undertaken the business of the election at all, for it had been censured by an independent tribunal, and must have known that its choice would on that account alone fail to carry weight with the public, to whom the hospital appeals for support. Secondly, it was wrong in setting about the election precipitately and without taking counsel with its consultants. Sir SPENCER WELLS, Dr. BARNES, and Mr. HUTCHINSON have all felt it their duty to resign, we cannot doubt, because they disapproved of the action of the Board of Management. The former two gentlemen, although they had lent assistance in the matter, have obviously since had reason to consider that the elections were unsatisfactory, and Mr. HUTCHINSON'S views on the point we have already quoted. These are the reasons why we have repeatedly urged upon the Board the necessity for resignation, and why we now congratulate them upon taking a step, doubtless painful, but right, and certain to raise them in the esteem of those whose ministers they are in discharge of a public trust.

There remain for consideration the positions of the present medical staff and of the past. Each body has been in a false position. With regard to the present staff, it is true that they have been duly elected; but they have been elected in a manner that has so far failed to meet the approval of the three eminent consultants hitherto associated with the hospital that these gentlemen have declined to continue their connexion with the hospital. Under these circumstances it ppears to us that the members of the staff would be acting in the interests of the hospital and in the way most becoming their professional position if they frankly recognised that their election was, through no fault of their own, conducted in a manner that has been very generally regarded in their profession as unsatisfactory, and refused to continue their association with the hospital until the matter was put right. We understand that this course is now likely to be taken. It is the stated intention of the medical staff, at the imminent meeting of Governors, to recommend to the Governors the appointment of a Committee, which shall include several leaders of the medical profession, to advise on the selection of the medical staff. It is not clear what the exact intention of the medical staff thus expressed is, but it would appear to be tantamount to resignation. And we think that they are right, although we have always held that their resignation is of secondary importance to that of the Board, and necessary because of the attitude of the Board. It will, no doubt, be a somewhat difficult matter to obtain such a Committee as they desire; but to clear the way by a practical suggestion we may assert, and no one is likely to controvert it, that the two medical members of the Committee of Inquiry, Sir JOHN WILLIAMS, nominated by the Royal College of Physicians, and Mr. HOWSE, nominated by the Royal College of Surgeons, with Mr. HUTCHINSON and Lord CADOGAN, if they would consent to act in the matter, could be relied on to select an efficient staff. If the Governors of the hospital could secure the services of such a committee and would give them full discretion, we believe it possible a satisfactory solution of the present difficulty would be found.

With regard to the past staff there is one point that must be set right. Certain old members of the staff being general practitioners were disqualified from serving upon the new staff. This must be made clear. Privately to have intimated to these particular gentlemen that their status in the profession as general practitioners would preclude them from being elected could not be expected to stop them from presenting themselves for re-election. They, with all their colleagues, were under the adverse criticism of the Committee of Inquiry, and not to have faced the chances of re-election would have been to tacitly acquiesce in the criticism.

IT is, we can conceive, difficult for a man placed in circumstances of good health and sufficient opulence to do justice to a profession which exists directly for those who are "sick" and indirectly for those who are poor. This, however, was the duty which the Duke of DEVONSHIRE had to discharge on Tuesday as President of Owens College.

The occasion was that of opening the extensive buildings which have been lately added to the medical school of the College, including administrative rooms, class-rooms, lecture theatres, and laboratories both for ordinary instruction and the prosecution of research. Mr. YOUNG, the Dean of the School, described the buildings as "complete in character and exceptionally extensive." Doubtless they will give to students in Manchester and to practitioners great advantages for keeping abreast with the ever advancing knowledge of the day. The speech delivered by the Duke of DEVONSHIRE, though lacking that finest note to a physician's ear—the one which comes from a sense of great service rendered, like that in POPE'S lines to ARBUTHNOT:

> "Friend to my life, which did not you prolong
> The world had wanted many an idle song"—

was full of that good sense and that interest in sound education which so eminently characterise his public utterances. Owens College is to be congratulated on its success and on its steady growth. In 1871 there were 99 medical students, in 1881 274, and in 1891 423. The new buildings will doubtless be a source of still further success. But not the least success on which we would congratulate the school is the selection of its president. His speech shows that he has deeply considered the question of medical education, especially from the public point of view. He has, perhaps, not quite made up his mind how far it is the duty of States, failing such help from private munificence, to assist the medical student in the long and costly education which is now exacted of him. But it is evident that the question is being considered seriously by him. We shall look with much interest for any further development of his Grace's reflections on this subject. Meantime, we direct attention to two or three points in his interesting speech. He is apparently more impressed with the preventive than with the curative side of medicine, but he is far too sensible a man not to see the enormous importance of the difference between perfect and imperfect knowledge on the part of a medical practitioner with respect to the saving of life and the prevention or alleviation of suffering. Like the two other great statesmen of the day, he spoke very strongly and clearly of the importance of the position of the medical practitioner in society, laying special emphasis on his knowledge of all classes and on his power of "binding them together," assuring the poor of the sympathy of the rich, and informing the rich of the sufferings of the poor. Such an observation from so practical a statesman as the Duke of DEVONSHIRE deserves to be seriously considered by the profession. The peculiar knowledge of life which only medical men have, and their position in society, make their opinions peculiarly valuable in days when the adjustment of social and sanitary questions constitutes so large a part of our legislation. They should, indeed, be careful to avoid mere party and petty subjects, but on really large questions of principle and of justice between classes they should have opinions and not be afraid to express them.

SOCIETY OF ARTS.—Among the arrangements for the 141st session of the Society of Arts we notice that a paper is announced from M. Hermite on the Electrical Treatment of Sewage.

Annotations.

"Ne quid nimis."

THE TREATMENT OF DIPHTHERIA.

THE publication of a long article upon the antitoxin treatment of diphtheria in the columns of a daily paper is much to be deprecated while the treatment is still on trial in this country. In itself the article was remarkably fair and temperate, but considering the difficulty which is experienced in obtaining a supply of antitoxin at the present time the premature publication may lead to much disappointment. Already the article has led to a certain amount of correspondence in the public press, much of which strongly calls up memories of the older "research for endowment" papers and letters. Sir Joseph Lister urges the claim of the British Institute of Preventive Medicine to the liberal support of the public, and lays much stress upon the harmless nature of antitoxin and upon its value for the protection of nurses and the relatives of patients. He asserts that a perfectly satisfactory product has already been obtained at this Institute, and as the council feel it to be their duty to proceed on a very much larger scale, funds are urgently needed. This letter was speedily followed by one from Professor Crookshank from the Bacteriological Department of King's College, indicating that two things are necessary in the investigation of the new treatment—the education of medical men in bacteriological diagnosis and the supply of materials. Professor Crookshank justifies an appeal for funds by giving the numbers of students and medical practitioners who have received practical instruction in general bacteriological work, and we trust the appeal will not be made in vain. The case is somewhat different with the British Institute of Preventive Medicine; here the avowed object is to enable medical men to obtain antitoxin "at a rate so reasonable that it can be employed without stint"; in a commercial sense it is rather a novel idea to reduce the price of an article by public contributions towards the expense of its manufacture. The underlying principle has hitherto only been applied to education, where the public contributions are to a large extent compulsory. It would require much boldness or a deficient sense of humour to induce a manufacturing chemist to appeal for public support to enable him to undersell foreign competitors. But this is practically Sir Joseph Lister's position, since in his letter there is no indication of an intention to supply antitoxin gratuitously.

CLAUDE BERNARD.

A WORTHY tribute was last week paid to the memory of Claude Bernard. A statue of him has been erected in Lyons, the great commercial city in whose neighbourhood he was born in 1813, and it has now been unveiled in presence of a large number of scientific notabilities. Delegates were sent from many foreign universities, including those of Lausanne, Freiburg, Bonn, and Glasgow. Bernard's career commenced in a pharmacy in Lyons; but he soon betook himself to the wider field and the unrivalled opportunities of Paris, where, at the age of twenty-eight, he became assistant to Magendie in the laboratory of the Collége de France. Here he continued to work for many years, both at original research and in the training of pupils who themselves became famous, until, as Professor of Experimental Medicine in the Collége de France, he succeeded Magendie in 1855. Until he was forty he remained undecided whether to devote himself to practical surgery or to pure science, but in 1853 he chose the latter and took his degree of Doctor of Science at the

Sorbonne. In 1867 the Emperor nominated him Commander of the Legion of Honour, the next year he was elected a member of the French Academy, and thenceforward he was everywhere recognised as the foremost representative of French science until his death in 1878. No wonder that the local patriotism of Lyons has provided a memorial of his early residence there. Our countryman, Lord Reay, speaking at a luncheon which followed the unveiling of the statue, eulogised the alliance between science and commerce and the cordiality existing between France and Great Britain.

A CONDEMNED BIBLE.

AT the recent sessions of the Central Criminal Court a prisoner was convicted of a crime which need not be specified; suffice it to say that a girl of the tender age of eleven years was, in consequence of that crime, infected with the virus of syphilis. The oath was administered to her in the customary way, whereupon Mr. Justice Collins very promptly and properly ordered the book to be destroyed. We have often insisted on the danger of the indiscriminate swearing of witnesses on the same volume of Holy Writ. It is matter for congratulation that the knowledge of this danger is reaching beyond the medical profession, and more so that so high a personage as one of Her Majesty's judges has publicly recognised the fact.

DEATHS UNDER CHLOROFORM.

A DEATH associated with the giving of chloroform is reported from the Great Northern Central Hospital. The particulars as they have reached us are few; but it appears that a girl aged nine years was put under chloroform for the purpose of having an operation performed for the cure of hernia. The proceeding was satisfactorily carried out and the patient taken back to bed in the ward after apparent recovery from the anæsthetic. A few minutes afterwards, however, she became faint and suddenly expired. Such "remote deaths" associated with chloroformisation are not so very uncommon. In the "Report of THE LANCET Commission appointed to investigate the Subject of the Administration of Chloroform and other Anæsthetics from a Clinical Standpoint"[1] various somewhat similar cases were quoted. The question always arises whether or not the chloroform plays more than a subsidiary part in such cases. Is the syncope the result of surgical shock? But in the present case little reason exists for supposing that such an operation, unless very prolonged, need occasion much shock. On the other hand, it is a constant matter of observation that the vomiting so common after anæsthetisation is associated with a severe degree of circulatory depression and not infrequently with actual syncope. Whether the views of Thiem and Fischer and of McWilliam are true or not, we cannot pretend to say, but it would appear that there is less ability to withstand such circulatory depression after chloroform has entered the blood. It must, however, be admitted that at present we do not know if this depression, which is found associated with post-chloroform sickness, is the result or the cause of the vomiting. A not dissimilar series of phenomena is observable in persons recovering from concussion of the brain, but whether any true analogy exists cannot, we think, be at present determined. A further chloroform fatality is reported to us from Stalybridge. A young woman aged twenty submitted herself to be chloroformed by a medical man with the view of having twenty teeth extracted by an Ashton dentist. After the extraction of seven teeth the patient died, it is said, from respiratory paralysis. It is very doubtful whether such wholesale extraction of teeth should ever take place at one sitting; but it is quite certain that chloroform should not be the anæsthetic employed. The conditions of tooth extraction are such that, besides the grave shock associated with laceration of so many branches of the fifth pair of nerves, there is always very considerable interference with respiration. This has again and again been shown to be one of the graver dangers of chloroform, if not the gravest. It is extraordinary that with so simple and excellent an anæsthetic as nitrous oxide gas for use in dental surgery chloroform should be used. A third death from chloroform is reported. It appears from the account which is before us that a child aged six years was given chloroform by Mr. Collier, the chloroformist at St. Mary's Hospital, Reading, with the view to the performance of paracentesis thoracis. The operation was performed, apparently with success, and two minutes subsequently breathing suddenly ceased. The child ultimately died after twenty minutes. Syncope is said to have been the cause of death. There is no doubt that chloroform is peculiarly full of risk in all conditions in which respiration is hampered by fluid in the chest, and a large mortality due, it is said, to the anæsthetic is recorded for the various operations performed in such cases. The safest plan to adopt when for any reason chloroform is selected is to anæsthetise the patient very lightly and to avoid anything like profound narcosis. Many alternative plans to giving chloroform have been suggested for these cases: thus we believe some years ago ether was administered per rectum to a number of patients at the Hospital for Consumption, Brompton, with success. The gravity of empyema when the case is really a bad one should prevent any attempts at anæsthetisation except with the utmost circumspection and care.

[1] THE LANCET, March 18th, 1893.

KING v. THE METROPOLITAN RAILWAY COMPANY.

THIS was an action for damages against the defendant company brought by Mrs. Maitland King, a masseuse, residing at Grosvenor-street. It was alleged that owing to the faulty construction of the steps leading to the subway at Rickmansworth station, and to the defective lighting, plaintiff fell and injured her knee. The trial before the Lord Chief Justice on Nov. 2nd terminated in the jury being discharged, as they were equally divided in opinion. Inasmuch as a further trial may ensue, we abstain from offering any comment on the merits of the case, either as regards the negligence charged against the company or the medical testimony. There are some points, however, in the plaintiff's evidence of ethical interest, and to these we would direct attention. In the first place Mrs. King described herself as a physician, and the inventor of the "Maitland System" of treatment. On interrogation by the court and counsel it was elicited that she held an American degree, which she obtained after five months' residence in the States. The professional value of such degree can be gauged by a knowledge of the fact that to take an English diploma it is necessary for the candidate to present certificates of having studied at a recognised school for a period of four or five years. Had Mrs. King merely informed the court that she possessed the said degree no fault could have been found with her presentment, but it was clear that she posed as a medical practitioner, for when questioned by the judge and counsel for the defendants she said that eminent members of the profession had been in the habit of sending patients to her, and when it was suggested this was for the purpose of massage, she supplemented her admission by the words "and for general treatment." In fact, there was a strong current of "Mrs. Maitland King the physician" running through her narrative. Commencing with the account of the American degree, the thread of professional status, lost amongst the commonplace answers to corresponding questions, was taken up again when the subject of remuneration

for the treatment of her injuries came to be discussed. "We doctors," said Mrs. King with becoming dignity, "never send bills in to each other. In the medical profession we pay indirectly by presents at Christmas." It was not to be supposed that Dr. Lithgow would charge a professional masseuse for services rendered, and in this he only instanced the chivalry and free help always accorded the satellites of the guild of medicine by its legally qualified members, to whom, unfortunately perhaps, Mrs. King does not belong. As Yuletide draws near, by all means let Mrs. King remember the fairy tale, the Christmas tree, and why not also the more substantial seasonable fare; but whatever form the medium of her thankfulness may assume let it be presented with a due feeling of professional modesty and subordination.

"MENTAL THERAPEUTICS."

THE account given in another column of the therapeutic influence of credulity raises a not unimportant question in medical practice—namely, how far it is justifiable for the practitioner to go in certain cases in conscious deception of the patient. It may be said that the end to be obtained justifies the adoption of any and every means that can be brought to bear; but the matter has another side to it. A blind belief in the powers of medical art has been transmitted from the days when magic and medicine were almost synonymous terms; and it is questionable whether it is really justifiable to encourage this kind of belief, except in circumstances such as our correspondent describes, and even then it is not certain that another line might not have been followed by success. It is doubtless more difficult often to strengthen the will-power of such an invalid than to yield to her credulity, but there can be no two opinions as to which line of action would be of most value to her mental health.

EXPLOSIVES FOR MINING PURPOSES.

THE importance of a safe explosive for mining purposes cannot be doubted, more especially as it has been shown in a late disastrous explosion that coal dust was a very important factor. A series of important tests have been carried out at an experimental station put down at the Moss Colliery, Ince, near Wigan (owned by Messrs. Pearson, Knowles, and Co., Limited). The tests were of explosives used in coal mining operations with regard to their safety under the conditions of a blown-out shot coming into contact with coal dust or an explosive mixture of gas and air in a coal mine, and also as to their relative strengths as explosives tested by the distance to which a projectile could be fired from a mortar. The experiments were witnessed by a number of Government mining inspectors, mining engineers, and also official representatives of the Miners' Federation of Great Britain. The various experiments were made with dynamite, roburite, tonite, westphalite, bellite, ammonite, Ardeer powder, and carbonite. As a guarantee that the conditions of the test were strictly adhered to and correctly carried out a committee—consisting of Messrs. D. R. Matthews (inspector of mines), I. Isherwood, J.P. (miners' agent), and J. S. Burrows (of Messrs. Fletcher and Burrows, Manchester)—was appointed to superintend the weighing of the various explosives and to record the results of the various experiments. The safety experiments were carried out in a testing apparatus consisting of an iron boiler 30 ft. long and about 6 ft. in diameter, placed in a horizontal position, with a cast steel mortar fixed in the far end, this part of the boiler being so arranged that a portion could be shut off by division into an air-tight compartment, in which a specified quantity of coal dust or gas could be introduced. The explosive to be tested was placed in an ordinary cartridge in the steel mortar, and fired by electricity in such a manner as to represent as nearly as possible a blown-out shot going directly into the division of the boiler containing the coal dust or the explosive mixture of gas and air. After the experiments in the boiler with coal dust the committee reported as follows: Dynamite, roburite, tonite, bellite, and ammonite resulted in complete ignition of the coal dust, large flame, and explosion; westphalite resulted in no ignition, no flame, and no explosion, and Ardeer powder and carbonite in no flame and no explosion. These were followed by experiments with the object of testing the effect of the most successful explosives when fired in the form of a blown-out shot coming into contact with an explosive mixture of air and gas, and the following results were recorded by the committee: Carbonite, Ardeer powder, and westphalite, no flame and no explosion; roburite, explosion and flame, apparently of gas only. To test the relative strengths of the various explosives, a projectile 35 lb. in weight was fired at an elevation of 55° from a mortar with a 10 drachm charge of each explosive, and the results were pretty nearly equal as regards dynamite, roburite, westphalite, bellite, and ammonite, tonite showing considerably less explosive power than the above; whilst Ardeer powder and carbonite, which in the first experiments caused no flame or explosion when fired into the coal dust, had only a very low explosive force—scarcely more than one-third of the dynamite, westphalite, and roburite,—and to this low explosive power was due their immunity from flame or explosion in coal dust, a result which no doubt would have been secured by other explosives that "fired" if they had been of similarly low power. The distances to which the projectile was thrown were as follows: Dynamite, 188 yards; tonite, 111 yards; roburite, 182 yards; westphalite, 177 yards; bellite, 171 yards; ammonite, 163 yards; Ardeer powder, 61 yards; and carbonite, 77 yards. The general opinion was that westphalite, under the conditions of the tests carried out, proved to be decidedly the best for mining purposes, but in view of the importance of the subject further experiments were desirable with the numerous covered or flameless explosives that have been brought forward recently for mining purposes.

THE DIFFUSION OF SMALL-POX.

IN the first week only of October did the new cases of small-pox in London reach double figures; the numbers last week were but 9, with 8 admissions to hospital, Saturday finding 48 patients under treatment in the institutions of the Metropolitan Asylums Board and at the Highgate Small-pox Hospital, against 63, 60, and 50 on the three preceding Saturdays. The single death from the disease registered last week belonged to the sanitary district of St. George, Hanover-square. In the matter of the fatal form of small-pox in London the four weeks of September furnished 10 deaths, against only 2 in the five weeks of October. Several towns in the Midlands return cases of the malady last week, among them being Wolverhampton, Handsworth, and Smethwick, though in none of these were the new cases numerous. In the King's Norton rural district there were 3 cases in the hospital at the end of October. A serious state of things exists at Birmingham, where there were no less than 69 fresh cases reported last week to the health authorities. The number of patients remaining under treatment at the hospital rose from 120 to 150 on Sunday last, 37 patients having been discharged during the week and 2 having died. At Willenhall there has been a slight recrudescence, but on Monday last there was but a single case in hospital, a boy three years old. The Chesterfield guardians and the Whittington local board have not yet settled their dispute about the payment for the care of pauper small-pox patients isolated by the health authority, but it seems likely that the matter will be

soon amicably ended by the settlement of the account by the guardians. At Liverpool the disease does not appear to make any great headway, as the fresh cases week by week never seem to rise to a dozen. But on one day last week there were as many as 6 attacks in the Toxteth-park locality. House-to-house inspection in the affected neighbourhood is still maintained, and a large percentage of the non-vaccinated persons discovered are found to be old "postponement" cases. This shows one weakness of the present system under which vaccination officers are often put off with certificates of postponement, only to find that before the period certified has elapsed the children in question have been removed and their parents have "left no address." A case of small-pox was last week reported as sea-borne at Port Talbot, near Aberavon, as also a case at Dowlais, and one was heard of in Merthyr Tydfil. In Dublin the disease continues. In the third quarter of this year there were 170 cases admitted to the Dublin hospitals, and 17 deaths occurred. In the first week of October 8 cases were admitted, leaving 62 patients in the wards; 28 admissions were recorded in the third week, 85 remaining; the respective figures for the fourth week being 15 and 79, with 4 registered deaths. The disease has practically left the north side of the Liffey, but has manifested signs of increase south of the river.

THE HEALTH OF SEAMEN.

WE have commented on the prevalence of phthisis among seamen of all nationalities, and in so doing we attributed this susceptibility to the very limited space allotted to the occupants of the forecastle. Dr. Collingridge, in his admirable lecture on the Hygiene of Ships, delivered before the Shipmasters' Society, London, and printed in THE LANCET of May 5th, 1894, urged that the legal minimum of 72 cubic feet should be largely increased—say, to not less than 100 cubic feet. We observe with pleasure that the Fifth and Final Report of the Royal Commission on Labour endorses these views, and recommends that in new ships 120 cubic feet of forecastle space should be provided for each seaman. Every such concession implies sacrifice of cargo space or storage room of some kind, but shipowners will assuredly ultimately find their reward in the better service rendered by men whose health has benefited by the improvement in their quarters; and not only their health but their general *morale*, for it is clear that every alleviation of the discomforts of seafaring life will tend to attract the services of a better class of lads who will eventually develop into useful sailors.

PHTHISICAL PATIENTS IN CAPE COLONY.

A CORRESPONDENT writes to us from Herschel, Cape Colony, to protest against the practice of sending out advanced cases of phthisis to that region, and he encloses cuttings from the *Queenstown Free Press* giving instances of frequent deaths from the disease occurring among recent immigrants. We entirely sympathise with our correspondent in his strong condemnation of "the cruelty of sending out young persons—and elderly ones, too—in the last stages of consumption simply to die amongst strangers." But the question is hardly so simple as our correspondent seems to suppose. Granting that climatic change is a valuable remedy in phthisis, and that South Africa is one of the best known health resorts in such cases—and we do not understand our correspondent to dispute these views,—we must not sweepingly condemn a certain therapeutic resource because it sometimes leads to disappointment and hardship. We should like to know how many of these patients suffering from advanced phthisis went out to South Africa without competent medical advice or in opposition to it; how many accelerated the progress of the disease by carelessness or imprudence; and in how many instances the fatal issue was precipitated by some contingency which cannot be foreseen—e.g., hæmorrhage. We are not inclined to admit that the medical profession in the United Kingdom is so ignorant of the elements of climato-therapeutics as our correspondent's complaint would seem to imply; but we welcome any means that can be adopted for spreading throughout the profession a correct knowledge of the rules which must govern the recommendation of change of climate in this disease. Those rules have been often laid down and will be found clearly stated in various text-books. They may be briefly summarised as follows. The disease must be more or less quiescent; the destruction of lung tissue must be moderate and not rapidly progressive; there must be no considerable continuous pyrexia, no rapid wasting, no profound debility; there must be no extension of the tuberculous process to distant organs; and there must be no serious complications. We do not say that the presence of any one of these symptoms is an absolute contra-indication to climatic change; but we do say that it is only in such cases as we have sketched that it can be recommended with any real confidence. We may sometimes be compelled to allow a patient whose malady presents unfavourable features to try climatic change for the sake of palliation of symptoms and temporary relief, but we should be very frank in giving our opinion in such cases.

THE SANITARY CONDITION OF GLOUCESTERSHIRE.

GLOUCESTERSHIRE is one of the counties which has not yet deemed it necessary to appoint a county medical officer, but which has felt the desirability of making some use of the district officers' annual reports. Unfortunately, the Council has not entrusted the duty of tabulating and summarising these reports to an experienced officer of health, but has appointed a special committee for the purpose. This committee has just issued its report for 1893, and it extends to only six and a half pages octavo with well-spaced type. Its character may be gathered from the fact that the account of the "water-supply" of the various districts in the county takes five lines and the "drainage" eight, and that many most important subjects, such as the "housing of the working classes," are not referred to at all. Such a report, concluding with the statement that the committee "can confidently assert that generally throughout the county the duties of the sanitary authorities appear to be carefully and efficiently discharged," is scarcely likely to carry conviction to a sceptical mind, and it is possible that it may do positive harm by engendering a feeling of satisfaction and security not at all justified by the actual conditions.

"CURIOSITIES OF A COUNTRY PRACTICE."

THE writer of an article under this title, which appears in the November number of the *Cornhill Magazine*, is a medical practitioner in Cornwall, and gives some curious and most interesting examples of the survival in his district of strange superstitions. A few years ago a white witch—"a dirty old woman living in a back street ..... the repository of innumerable absurdities handed down from countless generations of traffic in the black art"—shared with the orthodox practitioner the confidence of the country folk. The wise woman under her different names may, we know, be found in many parts of England yet, though her functions are generally more those of the soothsayer, of the astrologer, or of the detective than of the physician, but it is hard to believe that such a remedy as the one that follows—a remedy redolent of Alexander of Tralles—could really have been proposed in England in the year of the Jubilee. Yet as late as 1887 the finger of a man who had committed suicide

by hanging was used to charm away epileptic fits! A story is also told of how and why a woman preserved in spirit a toe which had been amputated, and the view taken by the patient shows in a wonderfully vivid manner how inextricably the materialistic and the transcendental are mixed in all vulgar superstitions. She had lived a bad life, she said, and she did not know where the toe might go if she allowed it to be buried at once; but as she had resolved to lead a more creditable career in the future she kept the lost member by her, "that she might get her toe again some day and not go limping in the next world." The article is, in fact, an amusing collection of suggestive stories. The dates are not given, and this deficiency makes it impossible for us to see whether the fairy story confirms or refutes Mr. Andrew Lang's theory on the extinction of fairies as given in his new Yellow Fairy Book; but, with sufficient proof appended to render them trustworthy contributions to a science, many of the episodes described in "Curiosities of a Country Practice" would be welcome additions to the archives of folk-lore.

ENTERIC FEVER AT BUDOCK.

THE Falmouth rural sanitary authority have had before them a report by their medical officer of health upon an outbreak of enteric fever at Budock. The place seems to be a likely breeding ground for fever, being riddled with offensive privy pits, defective drains, and such like abominations, whilst the river Budock has up to the present received the sewage of the village and a great deal of that from Penrhyn; but, despite all this, the pump is looked upon as the main cause of the prevailing fever, which has attacked about twenty persons. This pump has, it would appear, been already ordered to be closed, but has been continued in use. As far back as August the medical officer advised its closure; but lack of this precaution had now been followed by the inevitable consequence of delay in matters of sanitary importance. A scheme for the innocuous disposal of the sewage seems now, however, to be in progress, and the authority appear to be desirous of at last closing the pump, though the order is apparently for six months only. It is to be hoped that there will be no disposition to reopen it until there is no longer any possible doubt of the wholesomeness of its contents as a permanent supply.

CEREBRAL LESIONS AND GONORRHŒA.

IN a recent number of the *Revue Névrologique* Professor Pitres has a short paper on this subject. He has been led, he says, to publish the two cases presently to be referred to because of a recent communication given to the Society of Neurology and Psychiatry at Moscow by Professor Tambourer on affections of the nervous system resulting from or associated with gonorrhœa. In this communication M. Tambourer mentioned the case of a young man aged twenty-five years who in the course of a chronic gleet lasting three years was suddenly struck down with apoplexy and died on the third day. Unfortunately no necropsy was permitted, but M. Tambourer attributed the attack to septic embolism. Professor Pitres' cases are as follows. The first was that of a man aged fifty-nine years who, in the course of an acute attack of gonorrhœa, had painful swelling of some joints the day after admission to hospital, and later in the same day was suddenly attacked with right hemiplegia accompanied with coma. Six weeks later he was seized with Jacksonian convulsions, in which he died. At the necropsy a very extensive softening was found in the region of the Sylvian artery. The parts were diffluent, and no atheroma of the vessels could be discovered. No bacteriological examination was made. The second case was that of a young man aged twenty-three years. He had an attack of gonorrhœa, from which he made a good recovery. A second one two years later had lasted for five months and was not quite cured when one morning he suddenly had an attack of left hemiplegia, which rapidly cleared up, so that in a few weeks he was able to use his hand and walk without difficulty; but there still remained facial asymmetry and a certain amount of awkwardness in carrying out voluntary movements with his left hand. There was no evidence of cardiac lesion or of atheromatous arteries. The coincidence of those attacks with the presence of gonorrhœa is certainly striking, and the well-known fact that myelitis occurs apparently as a result of gonorrhœa suggests that these cerebral lesions may have a close causal connexion with that disease and are not merely coincidences.

DIPHTHERIA IN LONDON.

THE records as to diphtheria in London last week were in all respects save one less favourable than those of the week preceding. The admissions to the hospitals of the Metropolitan Asylums Board, which had been 102 in the preceding week, fell to 99; but the cases remaining under treatment at the close of the week were 537, against 521, 521, and 531 respectively on the three preceding Saturdays. The deaths, which had been 54, 61, and 49, were last week 54 again, 4 each being credited to Paddington, Kensington, and Camberwell, and 3 each to Hackney, Poplar, St. George Southwark, Lambeth, and Greenwich sanitary areas. In the outer ring there were 20 deaths, of which 12 belonged to the borough of West Ham.

MEDICAL AND DENTAL PRACTICE IN THE TRANSVAAL.

ACCORDING to information supplied by Mr. Quin, L.D.S., of Johannesburg, the Volksraad has recently ratified a new arrangement in regard to medical and dental practice in the Transvaal. No person in the Republic is allowed to be advertised as medical practitioner, surgeon, dentist, apothecary, chemist, or druggist unless his name appears in the Register of the Medical Board and his admission fee has been paid. The *British Journal of Dental Science* presumes that the same rule applies to any person who may wish to use such title without *advertising* it in the usual acceptation of the word. Contravention of this regulation will be punished by a fine of from £10 to £100, and in case of non-payment of the fine by imprisonment with or without hard labour for a period of from one to six months. Other financial arrangements oblige medical men and dentists to take out a licence during the time they carry on their profession within the Republic, the cost of which is as follows: for one year, £25; for nine months, £20; for six months, £15; and for three months, £10.

PAYMENT FOR THE ADMINISTRATION OF ANÆSTHETICS.

THE following letter, dated Nov. 1st, and signed by Sir Hugh Owen, Secretary of the Local Government Board, has been sent to the various boards of guardians:—"I am directed by the Local Government Board to state that it would appear from representations which have been made to them that some misapprehension exists as to the power of boards of guardians to pay for the professional assistance required by their medical officers in connexion with the administration of anæsthetics in cases of operations. As the guardians are aware, the Board recommend that, under ordinary circumstances, a case in which a serious operation is required should not be treated in a workhouse or at the patient's home, but should be sent to a public hospital. When, however, the latter course is not practicable, or when the operation is not of a serious character, the Board are prepared, in any case where an anæsthetic has been required, to

consider an application from the guardians for sanction to the payment to the medical officer of a reasonable sum in respect of any assistance which it was necessary for him to obtain in connexion with the administration of the anæsthetic or of any other cost incurred in connexion with its use. It has been the invariable practice of the Board to give their sanction to reasonable payments which have been proposed by guardians in respect of services of the character referred to; but they deem it desirable to draw the attention of the guardians to the matter with the view of removing any doubt that may be felt on the point."

THE ENTERIC FEVER EPIDEMIC AT NEWPORT.

WE learn that enteric fever still continues at Newport, in the Isle of Wight, and that Dr. Theodore Thomson, of the Medical Department of the Local Government Board, is doing his utmost to stir into activity the town council of this somewhat sleepy borough. Over 100 cases of fever must now have occurred, but the town council have not been desirous to know with any precision what mischief was going on in their midst, and hence they avoided adopting the system of notification of infectious diseases. This matter has now been very strongly pressed upon them. How the disease has been produced and how maintained is not, as yet, clearly ascertained; but whatever defects may belong to the system of sewerage, to which suspicion attaches in the minds of many residents, it is by no means clear that the water-supply of the town is above the risk of pollution. Detailed investigation into all the circumstances is by no means rendered easy by the former attitude of the town council and the lack of information as to the earlier attacks of the disease.

THE INTERCOLONIAL MEDICAL CONGRESS OF AUSTRALASIA.

A PRELIMINARY announcement of the fourth session of the Intercolonial Medical Congress of Australasia, to be held in Dunedin in February, 1896, will be found on p. 1115. We congratulate the Congress on having selected for general discussion one special subject, for we have frequently pointed out that this is the way in which a congress can be most practically useful. The question of tuberculosis in man and the lower animals has become very urgent of late years, as public opinion in both hemispheres has been agitated by the feeling that phthisis and allied diseases might be the result of using butcher's meat and milk derived from tuberculous cattle. We referred last week to the diversities of opinion on this subject existing among competent observers and sanitarians, especially as to the amount of obvious tubercle which would warrant the destruction of an entire carcase. We trust that the scientific energy of our Australasian brethren will do something to settle the vexed questions, and that competent representatives from the mother country may attend the Congress and benefit by the experience of men who live in closer connexion with rural problems than some of our philosophers.

THE PLYMOUTH SMALL-POX FLOATING HOSPITAL.

THE Plymouth town council have recently obtained and fitted up at considerable expense a commodious vessel known as the *Maud* for use as a small-pox hospital. There appears, however, to have been some difficulty in obtaining for the vessel a suitable mooring station in the waters of Plymouth Sound, and in a recent gale it was found impossible to visit the vessel for two days in the position in which she is at present moored. Further, it is reported that the vessel dragged her anchors, and that the patients are at times troubled with sea-sickness. In this latter connexion it should be borne in mind that the vessel in question is intended primarily for the use of the townspeople and not for the seafaring class, to whom *mal de mer* would have no terrors. Obviously the position of the ship is a matter of no small importance, more especially as there is apparently no medical officer on board. We believe the *Maud* is at present anchored in the vicinity of the *Pique*, the hospital ship belonging to the Plymouth port sanitary authority, and we hear that objections have on more than one occasion been raised as to the somewhat risky and inaccessible position in which the *Pique* is moored. It seems, however, that the naval authorities having jurisdiction over the waters of the Sound have not seen their way to afford the *Pique*, and presumably also the *Maud*, more desirable berths than they at present occupy. Having regard to the large area of water comprised within Plymouth Sound and the waters abutting upon it—such, for instance, as the Cat-water and the Hamoaze—it seems difficult to believe that the present moorings, where the vessels are exposed to the south-westerly gales, are the only isolated ones that can be found. Under any circumstances it behoves the naval and military authorities to render every possible assistance to both the urban and port sanitary authorities of Plymouth, especially so when it is remembered that the *Maud* and the *Pique* have been of the very greatest service to the town and port, and thus indirectly, if not directly, to the soldiers and sailors in Devonport and Plymouth.

SUCCESSFUL ACTION OF THE FRENCH MEDICAL PRESS ASSOCIATION.

THE French Medical Press Association has just appealed successfully to the President of the Republic on behalf of a medical man whom the Assize Court of Versailles had found guilty, apparently on most insufficient evidence, of being accessory to a criminal abortion, and whom they had sentenced to three years' imprisonment. This punishment has now been entirely remitted. The finding of the court would seem to be very incomprehensible in face of the fact that the girl had been pregnant twice before, and that there was no evidence, circumstantial or otherwise, except her statement, to inculpate the medical man, whose own account of his attendance on the patient was most straightforward, while hers was marked by numerous prevarications and contradictions. The French Medical Press Association is to be warmly congratulated on its energy and success in saving an innocent practitioner from a gross injustice.

THE NOTIFICATION OF MEASLES.

IN regard to an outbreak of measles at Stockport, Dr. Charles Porter, the medical officer of health of the borough, has drawn the attention of his Sanitary Committee to the very heavy mortality from this cause in the second quarter of 1893, the number of deaths during that period being equal to the combined total of deaths from small-pox, scarlet fever, and measles during the whole year. In view of the fact that the recently published experience of districts in which complete notification has been tried has, in his opinion, failed in most cases to show a return commensurate with the heavy outlay incurred, Dr. Porter does not press for the notification of each case, but as an alternative recommends the adoption, if possible, of a comparatively inexpensive arrangement by which the first attack in every house invaded should be notified, but no subsequent case arising in the same house within thirty days. Dr. Porter believes that this expedient, if energetically and systematically adopted, would afford facilities for—(1) advising isolation and proper care of sufferers; (2) controlling school attendances from infected houses; (3) more promptly detecting infected schools; and (4) preventing the concealment of cases of scarlet fever under the pretext that the parents thought the disease was measles. Handbills and

cautionary notices have been supplied to the schools and school attendance officers for distribution, and district registrars and schoolmasters have been invited by circular to notify to the Health Department all cases coming to their knowledge.

THE CHELSEA HOSPITAL FOR WOMEN.

THE Board of Management of the Chelsea Hospital for Women having resigned, a meeting of the governors will be held at an early date to elect a new Board. We understand that it is the intention of the medical staff at this meeting to recommend to the governors the appointment of a committee, which shall include several leaders of the medical profession, to advise on the selection of the medical staff. We have dealt with this subject in a leading article.

BRAIN LESIONS AND INTERNAL HÆMORRHAGE.

AT a recent meeting of the American Neurological Association Dr. Wharton Sinkler recorded an interesting case, of which a brief account is given in the *Boston Medical and Surgical Journal*. The patient was a man sixty-seven years old who had worked for many years in a stone quarry and had received frequent slight injuries to the scalp in consequence of being struck by fragments of stone. In July of 1892 he became suddenly ill after exposure to the sun, and was removed to his home in an unconscious condition. He was there seized with convulsions, which continued at intervals for two days. After a month he was able to resume his work, but two weeks later began to suffer from epileptiform attacks, which recurred about once or twice a week. These attacks were always preceded by an olfactory sensation of burning sulphur. After a time he began to have maniacal attacks after the fits, and was removed to the Philadelphia Hospital. The attacks were of what is known as the procursive variety of epilepsy. He would start off running, and he imagined that he was pursued by devils. His intellectual powers gradually failed; he fell into a somnolent condition which lasted about three weeks. He was then suddenly seized with profuse intestinal hæmorrhage, from the effects of which he died in a few hours. At the necropsy the intestinal mucous membrane was found to be softened and deeply injected, but no ulceration or rupture of any vessel was found to account for the hæmorrhage. The brain showed marked evidence of lepto-meningitis over the left hemisphere, and the vessels at the base were atheromatous. In the posterior right thalamus there was found a small area of softening about one-third of an inch in length and one-fourth across. No other coarse lesion was found, and Dr. Sinkler in recording it recalls the observations of Lussana, Brown-Séquard, Ebstein, and Schiff, who by wounding the corpora quadrigemina and optic thalamus in the lower animals produced ecchymoses and hæmorrhages into the mucous membranes of the stomach and colon. The case considered in connexion with those experiments is certainly very suggestive.

MR. E. SNELL, M.D. Lond., B.Sc., D.P.H., has been appointed by the London County Council to act as medical officer in charge of the men employed in the Blackwall tunnel. Dr. Curnow's account of a case (*vide* page 1088) which has come under his care, where the patient was suffering from the effects of the compressed air in the tunnel, shows well the necessity for such an appointment.

THE Professor-Superintendent of the Brown Animal Sanatory Institution (Dr. C. S. Sherrington, F.R.S.) will give a lecture at London University, Burlington-gardens, on Tuesday, Nov. 13th, at 5 P.M., on the "Blood in Inflammation"; and a second lecture on Tuesday, Nov. 20th, at the same hour and place, on the "Sensory Apparatus of Muscle."

AMONG those recommended by the President and Council of the Royal Society for election into the Council for the year 1895 are Professor Michael Foster, M.A., M.D., and Sir Joseph Lister, F.R.C.S. (as secretaries); Sir John Kirk, G.C.M.G., M.D., Professor Alexander Macalister, M.D., and Professor J. S. Burdon-Sanderson, M.D.

THE Royal British Nurses' Association will hold its eighth annual conversazione on Friday, Dec. 7th, at the Grafton Galleries, Piccadilly, London. The badges will be distributed by Princess Christian of Schleswig Holstein.

Pharmacology and Therapeutics.

FREEZING AS A MEANS OF PURIFYING DRUGS.

THE purification of substances by submitting them to very low temperatures—i.e., by the removal of the impurities as the temperature sinks—has become, if we are to believe a little pamphlet which has recently reached us, a commercial undertaking. It is now well known that when many volatile organic bodies are subjected to low temperatures the impurities contained in them freeze out first and may be separated, so that at last a very pure product is obtained. Chloroform, ether, alcohol, chlorethyl, and bromethyl may thus be purified, and it has even been asserted that when cognac is carried to a sufficiently low temperature, and after certain bodies, which during the freezing process separate out, have been removed, the spirit possesses all the bland qualities for which genuine and old cognac is esteemed. The handbook we have already referred to contains the prices of a list of substances purified on the lines indicated. It emanates from Raoul Pictet, the Chemical Institute, 23, Usedom Strasse, Berlin. In no other section of science is it more important than in therapeutics and anæsthetics that the agents employed should be of the utmost attainable purity, and of the known processes of purification, and especially of organic bodies, that of purification by crystallisation appears to be most effectual. At any rate, now that the commercial production of many medicaments purified by this means has been set on foot, we may expect to hear of more extensive and complete clinical tests being made, which alone can be relied upon to establish the efficiency of a new purifying process.

ARISTOL IN OTORRHŒA AND BURNS.

Dr. Krebs of Hildesheim has found aristol—which is a di-iodide of thymol occurring as a brownish powder and containing nearly half its weight of iodine, and which has been used for the last three or four years in various skin diseases, ulcers, burns,[1] keratitis,[2] and nasal affections[3]—very valuable in aural practice. In thirty-three cases of chronic purulent otitis aristol alone effected a complete cure in twenty-two.[4] He does not consider it to be an antiseptic, as it does not deodorise a fetid discharge, but he finds that it has a marked effect in drying up and arresting the secretion. In serous discharges of a chronic character persisting after the purulent character has disappeared aristol is preferable to all other drugs, and especially to boracic acid. Often one or two insufflations are sufficient to arrest the serous discharge. It is also of value in chronic otorrhœa when uncomplicated and where the perforation is a large one; also in cases where there are granulations of the tympanic cavity and meatus, provided they are not too extensive, and that they are not due to caries of the bone. Aristol should not, however, be used where there is but a small perforation, in caries, or where the mastoid antrum is affected, and it is useless in fetid otorrhœa, though, if the fetor is due merely to want of cleanliness, the ear should be cleaned, and boracic acid, which is a true antiseptic, blown in.

[1] THE LANCET, July 18th, 1891.
[2] THE LANCET, May 9th, 1891.
[3] THE LANCET, July 5th and Oct. 11th, 1890.
[4] La Semaine Médicale, 22 Août, 1894.

According to Dr. Haas,[5] burns and scalds of all kinds are most satisfactorily treated by means of aristol, which is, chemically speaking, biniodide of thymol. His plan is to disinfect the burnt surface with a boracic lotion and to open the blebs; aristol gauze is then applied, and this is covered with sterilised cotton-wool, gutta-percha paper, and a bandage. He does not recommend the application of aristol in powder direct to the wound at the beginning, as this is calculated to hinder the dressing from soaking up the secretion. Later, however, when this has diminished, the aristol may be applied either in substance or in the form of a 10 per cent. ointment made up with olive oil, vaseline, and lanoline. Dr. Haas has collected a large number of references to reports by continental and American surgeons on the use of aristol in burns, a treatment that is by no means very novel, as Dr. Stern[6] of New York employed it successfully more than three years ago. He and most of the writers referred to by Dr. Haas employed a ten per cent. ointment or a solution of aristol in oil from the beginning. The great advantages of aristol are its analgesic action, its antiseptic properties, and its power of hastening cicatrisation. Added to these, which to some extent are shared by iodoform, is another great advantage—viz., its entire harmlessness. In this it differs from iodoform, which is unsuitable for application over an extensive surface, for fear of its exerting a toxic action.

GLYCEROPHOSPHATES IN NERVOUS DEPRESSION.

Dr. Robin brought before the Paris Academy of Medicine[7] a short time ago an account of some observations in which he has been engaged for five or six years past, on the salts of glycerophosphoric acid as a remedy in nervous affections of various kinds in which lecithin has apparently undergone decomposition, as indicated by the existence of incompletely oxidised phosphorus in the urine. He found that four grains of the glycerophosphate of calcium administered subcutaneously exercised a remarkable effect on the physiological processes, increasing the urea in the urine from 2·3 to 3·1 per cent., also the bodies which are the products of nitrogen and sulphur oxidation, and the proportion of chlorides and sulphates, as well as the lime, magnesia, and potash. The increased nutrition of the organs is probably due to direct stimulation of the nervous system, and it thus acts in an opposite manner to antipyrin, which, as is well known, depresses the nervous system and is therefore indicated in conditions of nervous irritation. As to the therapeutic use which can be made of the glycerophosphates, Dr. Robin has given them subcutaneously in doses of from two and a half to four grains daily in cases of sciatica, tic douloureux, neurasthenia, phosphatic albuminuria, and even Addison's disease, with much benefit. The injection does not cause any local disturbance. In one case of locomotor ataxia, however, some cerebral irritation with insomnia was caused by the treatment.

ICHTHYOL IN ACUTE PHARYNGITIS.

In acute pharyngitis a gargle containing two or three per cent. of ichthyol, used every ten or fifteen minutes, is said by Dr. Sonnenberg[8] to be the most rapidly efficacious treatment. In all the forty cases in which he has employed it the inflammatory symptoms entirely disappeared in from twelve to twenty-four hours.

FERRATIN.

Under ordinary circumstances the liver of the pig contains an acid albuminate of iron which has been styled "ferratin," and this has been used with success for therapeutic purposes. M. Germain Sée[9] states that even when taken for a considerable period it never causes gastric or intestinal disturbance, and never gives rise to the formation of sulphuretted hydrogen in the bowel. Indeed, it improves the appetite and regulates the intestinal functions. The dose of artificial ferratin is from eight to twenty-four grains per diem; it is not soluble in water. In a large number of cases of chlorosis and anæmia following acute affections Banholzer found the hæmoglobin increased by 5 per cent. after a week's treatment by ferratin, and at the same time there was a marked increase in the number of red corpuscles. Similar results were obtained in chlorosis and anæmia which were not due to acute diseases, and it was noted that all the patients enjoyed an excellent appetite while under the treatment. When a comparison was instituted between ferratin and Blaud's pills it was found that the former produced the greater increase in the hæmoglobin.[10]

[5] Morgagni (July), quoted in Allgemeine Medicinische Zeitung, No. 72, 1894.

[6] THE LANCET, July 18th, 1891.

[7] Session of April 24th, 1894.

[8] La Semaine Médicale, Sept. 12th, 1894.

[9] Nouveaux Remèdes, Sept. 24th, 1894.

[10] Centralblatt für Innere Medicin, No. 4, 1894.

THE INFLUENCE OF OCCUPATION ON EYESIGHT.

AN interesting paper was read by Mr. Simeon Snell at the recent meeting of the British Medical Association at Bristol on the Relations of Some Occupations to Eyesight. Mr. Snell, as Ophthalmic Surgeon to the General Infirmary, Sheffield, has had unusual opportunities of seeing and treating affections of this kind, and his observations are of a highly practical nature. He refers in the first instance to the effects of bisulphide of carbon, which was the subject of an inquiry made in 1885 by a committee appointed by the Ophthalmological Society. This heavy, transparent, ill-smelling fluid is used as a solvent of sulphur chloride, and is the agent effecting the "vulcanisation" of indiarubber. The process by which the rubber is impregnated with the sulphur chloride is termed "curing," and during this process heavy fumes of the bisulphide are given off. The vapour was much employed some years ago as a powerful irritant of the conjunctiva, causing abundant lacrymation, by which it was thought nebulæ of the cornea left after ulcers could be washed away or cleared up. Mr. Snell states that he has seen one case of amblyopia which he considers was due to this agent, since the affection supervened after exposure to its influence and disappeared when the man was engaged in another part of the works. Another chemical agent exercising a deleterious action on the eye and on the health generally is dinitro-benzol. This substance is used in the manufacture of explosives, and the patients affected were chiefly those engaged in mixing or grinding the material. It induces amblyopia or dulness of vision, and on inquiry no less than five cases were discovered. The toxic influence of tobacco when chewed may now be regarded as a well-established fact, but Mr. Snell endeavoured to ascertain whether Galezowski's statement that visual disturbances occurred in those engaged in the manufacture of tobacco as a consequence of the inhalation of nicotine powder was correct. His observations are, however, opposed to this view, and he quotes the opinions of Mr. Shears, who visited a large tobacco factory where 1200 men and women are employed; of Mr. C. Lee, who made similar observations at a large factory at Chester; and of Dr. Dowling, who examined some of the operatives in a factory where 3000 hands were employed, all of whom were opposed to the statement made by Galezowski. In particular Dr. Dowling found that those who did not smoke were uniformly free from troubles of vision of a toxic nature, and that the females were almost universally free from the trouble. The cases recorded by Mr. Priestley Smith and Valude show that iodoform must be added to the agents causing toxic amblyopia; but inquiries made for Mr. Snell in iodoform manufactories are to the effect that no cases have been observed of impairment of vision attributable to the manufacture of this substance. The prejudicial action of lead has long been known, but Mr. Snell mentions a hitherto unsuspected mode in which the toxic influence of this metal may be produced. Saturnine amblyopia occurs, it appears, amongst the filecutters of Sheffield, and this is due to the circumstance that the file is placed on a lead bed, and each time it is struck with the chisel sufficient of the lead is raised to cause by its inhalation the symptoms of toxic amblyopia. It may, however, reasonably be suggested that the lead is introduced by the contact of the hands with it and its ingestion with food. But the most interesting part of Mr. Snell's paper is that where he discusses the influence of intense light and excessive heat. His own observations do not support the statements made by others that glassblowers are frequently the subjects of cataract. We agree with Mr. Snell. When Salviati's shop was in work at Olympia we made some inquiries to ascertain whether there was any truth in the statement that the workmen commonly lost their vision at the age of forty, but two of the men working there were themselves long past that age and were not aware of any cases of blindness induced by the glare of

the furnace in their fellow workmen. Mr. Snell has ascertained that there is a very marked difference in the way a temperature is borne when it is below 2000° F. and when above that heat. Up to that degree a man can look at the metal in a furnace with comparative ease, but before it reaches 3000° he is compelled to wear coloured glasses. Now in cast-iron furnaces the heat of the metal is from 1800° to 2000° and the men take no precautions; but the heat of molten steel is from 2700° to 2800°, while the heat of the gases in the furnace would be about 200° or 300° more, and the men in attendance have to wear dark blue glasses to protect their eyes. The heat of the metal in the Bessemer process is higher still, increasing to 3000° or 3200°, but the metal has not to be so long or so carefully watched as in the Siemen's furnace. In none of these cases, however, has Mr. Snell been able to associate any deep or superficial eye lesion as a result of the exposure of the eye to intense light and heat. There is still another source of light which has been found to exert a prejudicial influence on the eye—namely, electricity; exposure to the light employed in electric welding—and supposed to be equal to 8000 candles—causes sharp conjunctivitis, with great pain and lacrymation, and, if it be allowed to enter the eye, optic neuritis, with retinitis and a central scotoma in the vision, is extremely likely to occur. The effects are due to the chemical rays, which are most intense towards the violet end of the spectrum, and the men are obliged to use a screen made of dark ruby, non-actinic glass. These, with many other details, are interestingly given in Mr. Snell's paper.

SANITATION ON THE RAILWAY.

OUR remarks[1] on disease germs in railway carriages have been extensively noticed by both the British and Continental press. We related that the experiments of Drs. Petri, Kolb, and Friedrich—the inoculation of 117 guinea-pigs with the dust collected in railway carriages and the bacteriological examination of that dust—proved that it contained pathogenic germs, and notably the bacillus of tuberculosis. The interest attached to these facts presses upon us the necessity of railway reform in respect to sanitation. Spittoons ought to be supplied to each railway carriage, which should contain a suitable liquid disinfectant; but the careful washing and purifying of the interior of railway carriages are more especially needed. In view of this necessity the first-class and second-class carriages are very unsuitably upholstered. The plain wooden seats of the third-class carriages are preferable, inasmuch as they can be easily washed. But when are they washed? How often is the inside of a metropolitan third-class railway carriage scoured with soap and hot water? The number of bacteria in the dust of a third-class carriage is certain to be much higher than in a first-class one, and if there is more facility for washing the need of washing is still greater. In the other classes the woollen and stuffed seats and cushions are serious obstacles to sanitation. On the French railway lines there is a large hand-pump which can be wheeled up to a railway carriage, and while one attendant works the pump-handle another with a hose brings a spray, which is projected with great force, to bear upon the cushions, the seats, &c. This spray generally consists of a mercurial solution. This is a very good precaution to take when it is known that the carriage is infected, but it cannot be applied as an everyday practice. Wood's woven wire spring seat, used by the Great Eastern Railway Company and on some of the Highland railways, would be easier to clean. It is as soft as horsehair and wool, and it does not harbour dust and is ventilated throughout. As the wire is galvanised and painted it can without injury be washed with soap and water. Whatever extra covering or cushion may be placed on this wire spring seat should be made of such oil-cloth or leather as to at least allow it to be wiped with a wet cloth. Thus furnished, railway carriages could be kept comparatively free from pathogenic germs—if there was only a service appointed to clean them. But, unfortunately, while cattle trucks are rigorously disinfected, a railway carriage is never similarly treated. If sheep or bullocks contract disease it may be traced to the cattle truck, and those interested in the cattle trade have brought sufficient pressure to bear to ensure the constant whitewashing and purification of cattle trucks.

[1] THE LANCET, July 7th, 1894.

Quite recently[2] we described how the German Government, as owner of the railways, contracted with the Berlin municipality for the thorough washing with hot water, soap, and soda of every cattle truck that entered Berlin, and this though the cattle, as a rule, were in perfect health. The movements of human beings cannot be watched and controlled like those of cattle. It was clearly proved that cattle were infected by conveyance in railway trucks, and the necessary precautions were consequently enforced. It is not so easy to say where or how a person contracts a disease—whether the germ was absorbed in a railway carriage, in a cab, or in any of the many other places the traveller has frequented. It should suffice, however, that pathogenic germs have been found and undoubtedly exist in railway carriages for us to demand that as much care should be bestowed on the purification of carriages that convey travellers as is already bestowed on cattle trucks.

A great deal more might be said on the hygiene of railways. We fear that the drainage and general sanitation of many railway stations are not all that could be desired. With regard to railways, the abolition of the second class by some lines has led to a general improvement in the carriages of the third class. These latter are, of course, by far the most important, for there are many more third-class travellers than second or first class; it is, also, the third class which pays. Whether a passenger be travelling third or first class, he requires air to breathe, and should have at least room enough to be able to change his position comfortably. It is injurious to health to sit in a narrow space for several hours. In the carriages of the Continental railways, and even in some of the older third-class carriages of England, there is not enough room. Then, in many instances the light is altogether deficient. Time is precious, and much reading has to be done in railway carriages; the eyesight of innumerable travellers has doubtless been permanently injured by the insufficient light in railway carriages. Again, warming and ventilating carriages, as we have on many occasions remarked, have been greatly neglected. We believe the movement of the train might be utilised as motive power for filtering or washing the air, and propelling it in sufficient quantities into the carriages. If the air was distributed all over the carriage in a diffused manner there would be no draught. The supply might be calculated almost mathematically. Under such circumstances the windows need not be opened, and travellers would not suffer from the dust and dirt which are blown about. The railway companies would, on their side, greatly benefit because their rolling stock would last considerably longer. But the question of warming and ventilating railway carriages in a scientific and automatic manner has hardly as yet been studied. As, however, the number of railway travellers increases every day, and as the average number of hours the travelling public has to pass in railway carriages also increases, the necessity of rendering railway carriages healthy and safe becomes more and more important. It is time, therefore, that the subject should be more carefully investigated.

SEVENTEENTH REPORT OF THE COMMISSIONERS OF PRISONS.

QUITE recently we noticed the first part of this report, and briefly dealt with some of the statistics of incarceration and prison mortality for the year ending March 31st, 1894. Part II. is now before us, and consists of the reports by the inspectors on each of fifty-seven local prisons. Tabulated statements of the daily average number of prisoners engaged in employment are given, together with the value of their work, the various kinds of labour being detailed under the headings of manufactures, building, and employment in the ordinary service of the prison. Hard labour of the first class is principally enforced by means of the crank, the tread-wheel, and stone-breaking, and in some nineteen cases is non-productive. In thirty-five of the prisons, however, crank and wheel labour is utilised in the grinding of corn, the pumping of water, and the sawing of wood. Second-class labour seems to be in every case productive, and consists of oakum picking, work at various trades, and employment in the ordinary services of the prison. Females

[2] THE LANCET, July 14th, 1894.

are employed in the laundry, at needlework, and at other duties of a domestic nature. At Carnarvon prison the cooking, hitherto done by females, is now done by the male prisoners. The health of the prisoners and the sanitary condition of the prisons are, on the whole, reported to have been satisfactory, and the same may be said with respect to discipline. At Lewes the health of the prisoners has been above the average.

The Discharged Prisoners' Aid Society has rendered excellent service in preventing the return to prison of discharged men, and is highly spoken of in the various reports. In one case—namely, at Ipswich—the chaplain expresses his regret that the funds of this society are not sufficient to send all willing youths to a seafaring life, or to give them in some other way an opportunity of learning a trade, in order that they may be rescued at a time when there is more hope of reformation being permanent. Complaint is made by the chaplain at Stafford that magistrates are constantly introducing fresh supplies of young children into prison, thus replenishing the springs of crime at their very source. This is all the more disheartening considering the great efforts that are being made to bring about a better state of things. In Cardiff and its surroundings the chief cause of crime seems to be drunkenness, and convictions for offences against the Sunday Closing Act have been rather numerous. The chaplain gives it as his opinion that for prisoners convicted of drunkenness over and over again ordinary imprisonment does them no good, and does not tend towards their amelioration. He advocates that habitual drunkards should be sent to special institutions for an indefinite period. In nearly every case the chaplain's report shows the behaviour at divine service to have been both reverent and attentive.

THE BUCKINGHAMSHIRE SANITARY CONGRESS.

MR. F. VERNEY, the chairman of the Sanitary Committee of the Bucks County Council, is to be congratulated upon the success of the conference which was held under his presidency at Aylesbury on the 31st ult. For some years this sanitary committee, led by Mr. Verney, has been trying to interest the Council in sanitary matters, but with so little success that a proposal has actually been made to abolish it altogether, the excuse being that the Council has no power to carry into execution any of the suggestions of the committee. According to the *Bucks Advertiser*, a certain portion of the Council has "taken a delight in making the work of the sanitary committee a farce," and has referred back carefully prepared reports and mutilated clauses beyond recognition. Disappointments and threats have only tended to increase the ardour of the chairman, and last week he invited to the county town a number of well-known sanitarians, including Sir Thomas Crawford, K.C.B., Dr. Bulstrode, Inspector of the Local Government Board; Mr. J. Torr and Dr. E. B. Forman of the London County Council, and the medical officers of health for Yorkshire, Essex, and other counties, to meet in conference the medical officers, inspectors, members of sanitary authorities and others interested in sanitary work residing within the county. In response to Mr. Verney's invitation the County Hall was well filled, and a number of interesting topics were discussed. In his opening address Mr. Verney referred to the importance of educating public opinion, and read letters from Baron Rothschild and other county gentlemen wishing the meeting success. Sir T. Crawford took for his "text" a letter written by Miss Florence Nightingale, in which she says, "What we require is not more literature, but hands to work. Health in the home has not been carried home to the hundreds and thousands of rural mothers and girls, on whom so largely depend the health of the rural population. In fact, they do not believe in sanitation as affecting health and preventing disease." He hoped that the Conference would result in strengthening the hands of the Sanitary Committee. Sanitary administration under the Local Government Act, 1894, was discussed by Mr. Torr, Dr. Southey, Dr. Bulstrode, Dr. Whitelegge and others, and in a letter Mr. Fosbroke (medical officer of health of Worcester County) related how the work in his department had increased by leaps and bounds, and how the county had derived benefit therefrom.

The discussion of the Sanitary Protection of the Milk Traffic, introduced by Messrs. Dobell, Gruggen, and De'Ath, drifted, as was pointed out by Dr. Thresh, into a discussion on adulteration and competition with foreign countries. The importance of the more careful supervision of dairies and cowsheds, and of cleanliness not only of the cows, but of the milkers also, was emphasised, and Dr. Thresh declared it a short-sighted policy to permit the present depressed condition of agriculture to be an excuse for doing nothing. Mr. De'Ath (medical officer of health of the Buckingham rural and urban districts) pointed out that the consumers of milk do not get what the producers sell, and that the public are defrauded by the middlemen. The fallacy that milk is valuable in proportion to its yellowness leads to the poorest skim-milk or cheese being made to look like the richest by addition of colouring matter—either anatto or a preparation of blood. This falsification is mainly done, not by the farmers, but by the milk-sellers. Cream is extracted from milk by centrifugal separators, and the skimmed milk is sent by thousands of gallons daily to London and other large towns to be mixed with new milk in proportions which are just sufficient to keep within the law as to the amount of butter fat, &c., in the mixture. This mixture is sold as new milk at such a price that the market value of real new milk to the farmer is proportionately reduced and his means of meeting sanitary requirements are thereby decreased. This system of mixing skimmed milk with new is so profitable to those who practise it that firms can easily afford to pay the fines which are inflicted when they are detected. Obviously in these instances the action of the law should be directed against the vendor and not against the farmer. Dr. E. B. Forman, member of the London County Council, said that the Public Health Committee of the Council were endeavouring to get rid of cowsheds in London and to withdraw the milk trade from the hands of the lower class of milkmen. Mr. Hattersley (chairman of the Aylesbury Dairy Company) stated that they never took any milk from a farm which had not been first inspected by the medical officer of health for the district and the water of which had not been analysed by their own analyst. Before coming to the conference that morning he found that out of 130 samples which had been forwarded to them for analysis forty-six were condemned, and consequently no milk was taken from these farms.

The Housing of the Working Classes Act gave rise to a good discussion, and it was remarked by several competent observers that although directly the Act has been of little service, yet that indirectly it had done an immense amount of good, especially in those counties in which a medical officer of health had been appointed.

The last subject introduced for discussion was that of "Isolation Hospitals," opened by Mr. Phillpot and the Rev. P. L. Cautley. It was stated that in the whole county there was only one such hospital. Many speakers gave details of outbreaks which had resulted in serious loss of life, and in the expenditure of considerable sums of money, which outbreaks could almost certainly have been prevented had means of isolation been available. Dr. Bulstrode expressed the opinion that an isolation hospital was an absolute necessity in every district properly administered, and exposed the folly of waiting for a serious outbreak of disease and then providing temporary accommodation during the panic.

We repeat that Mr. Verney is to be congratulated on the success which attended his efforts in organising so successful a gathering—successful not only from the authority of the speakers, but from the evident interest displayed by so many persons in the subject discussed; and it is sincerely to be hoped that the Bucks County Council will emphatically negative any proposal, if such be made, for abolishing the Sanitary Committee. That such a retrograde policy should ever be contemplated is almost incredible, for such a committee, presided over by so earnest a sanitarian as Mr. Verney, and advised by a competent medical officer, could not but be of immense benefit to the whole of the county.

INTERCOLONIAL MEDICAL CONGRESS OF AUSTRALASIA.

THE fourth session of the Intercolonial Medical Congress of Australasia will be held in Dunedin, New Zealand during the week beginning Monday, Feb. 17th, 1896, under the presidency of Dr. F. C. Batchelor of that city. It has

been decided to divide the work of the Congress into the five sections which we enumerate below, appending to each section the name and address of its honorary secretary, to whom communication with regard to papers to be read should be made:—(1) Medicine, including Diseases of the Skin (Dr. Daniel Colquhoun, High-street, Dunedin); (2) Surgery, including Diseases of the Eye, Ear, and Throat (Dr. William Brown, High-street, Dunedin); (3) Midwifery and Diseases of Women and Children (Mr. Thomas Morland Hocken, Moray-place, Dunedin); (4) Public Health, including State Medicine, Forensic Medicine, Psychological Medicine, and Demography (Dr. Francis Ogston, High-street, Dunedin); and (5) Anatomy, Physiology, Pathology, and Pharmacology (Mr. William Stewart Roberts, Moray-place, Dunedin).

The following gentlemen have kindly consented to act as local secretaries in the other colonies:—New South Wales: Mr. Philip Edward Muskett, Sydney; Victoria: Mr. George Adlington Syme, Melbourne; South Australia: Dr. Benjamin Poulton, Adelaide; Queensland: Dr. Ernest Sandford Jackson, Brisbane; Western Australia: Mr. Henry Frederick Harvey, Perth; Tasmania: Dr. Gregory Sprott, Hobart.

The general secretaries, Dr. John H. Scott and Dr. L. E. Barnett, of Dunedin, point out that a valuable and much appreciated feature of former congresses has been the general discussion of some subject of more than ordinary interest to all branches of the medical profession. It is proposed at the ensuing session in Dunedin to take up the question of tuberculosis in man and the lower animals.

All legally qualified medical practitioners are entitled to become members of the Congress on payment of the sum of one guinea, and each member will receive a copy of the Transactions, when published, without further charge.

The New Zealand Railway Commissioners have already been approached on the subject of granting concessions to members of the Congress, and they have generously agreed to issue to members from the other colonies and their wives free passes over the Government lines. It is anticipated that reductions in fares similar to those granted in former years will be made by the intercolonial and other steamship companies.

CHOLERA.

THE almost complete absence of intelligence regarding the prevalence of cholera is of happy augury. It shows, at any rate, that the disease is nowhere actively progressing or present in any force, although it may, owing to conditions of season, have entered upon a period of latency or dormancy, to be revitalised at some later date upon the recurrence of seasonal and other conditions favourable to its development. The only exceptions to this apparent hybernation of the disease seem to be in Turkey and Silesia. The last telegrams stated that many fresh cases had occurred in Constantinople, and that the disease had attacked some of the soldiers quartered in the barracks. It is also reported that a sharp outbreak of choleraic disease had occurred among some troops quartered at Glogau, in Silesia, and that Professor Flügge of Breslau had proceeded there to investigate the matter.

A report from Budapest states that a serious riot had occurred at Huszt, in Hungary, arising out of the objection of the population to an order that fatal cases of cholera should be interred in a separate cemetery.

UNIFORMITY OF TRAINING FOR NURSES.—At a conference held under the auspices of the new Nursing Society, the Matrons' Council (which, as its name implies, is chiefly composed of hospital matrons), in the Medical Society's rooms last week, a paper was read by Mrs. Strong, the Matron of the Royal Infirmary, Glasgow, entitled "The Method of Training Nurses in the Royal Infirmary, Glasgow, and a Plea for Uniformity in the Education of Nurses." The chair was taken by the Matron of St. Bartholomew's Hospital (Miss Isla Stewart), and there was a large attendance of London and provincial matrons. A discussion followed the reading of the paper, and finally the following resolution was unanimously adopted: "That in the opinion of this meeting it is necessary that an Act of Parliament should be sought for so as to provide for the uniform training, the uniform examination, and the legal registration of nurses."

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Cheshire County Sanitary District.—The administrative county of Cheshire had, according to the census of 1891, a population of 536,644. The general death-rate for the whole administrative county for 1893 was 18·8 per 1000, the rates ranging from 26·2 in the Runcorn urban sanitary district to less than 8 per 1000 in the Cheshire portion of the Warrington rural sanitary district. The death-rate in the municipal boroughs was 21·8, in the other urban districts 18·4, and in the rural districts 16·9 per 1000. The infantile mortality ranged from 300 per 1000 registered births in the South Wernett subdistrict of the Stockport union to no infantile deaths in the rural sanitary district of Birkenhead. The outbreak of small-pox which occurred in 1893 found several of the sanitary authorities quite unprepared in the matter of isolation accommodation, and Mr. Vacher, the county medical officer of health, records the experience of the Runcorn urban and rural sanitary districts as instances of this unpreparedness. Mr. Vacher relates that some cases of measles which occurred at Mottram seemed to indicate the carriage of the infection by the air. Diphtheria and croup are, Mr. Vacher remarks, notified very irregularly in Cheshire; for instance, during the year 1893 there were 35 cases of croup notified and 49 deaths. In discussing puerperal fever Mr. Vacher points out that the spread of this disease might be to some extent controlled if the medical officer of health received early notification of every case, and if all midwives were properly trained and subject to certain regulations. On the question of the desirability of notifying measles and phthisis, there seem to be considerable divergences of opinion among the several medical officers of health in the county. The hospital accommodation in Cheshire is sadly deficient, and there seems but little immediate prospect of improvement in this respect, and the same remarks apply to the provision of disinfecting apparatus. Mr. Vacher explains the law as regards bakehouses, but he adds that in only twelve of fifty-four reports is there any reference to these, and in the matter of food adulteration it appears that only in three reports is mention made of any action taken under the Food and Drugs Act.

Southampton Port Sanitary Authority.—The trade of the port of Southampton underwent in the year 1893 an enormous increase, and the net tonnage of vessels entering the port was nearly half a million in excess of that of 1892. At Mr. Wellesley Harris's initiative a conference between the port sanitary authority and representatives of the principal shipping firms trading with Southampton took place during 1893 as to the desirability of mutual action to prevent the importation of diseases other than cholera, yellow fever, and plague; and it was arranged to give the port sanitary authority every assistance when any vessels of the Royal Mail and the Union Steamship Companies arrived in Southamptom Water having cases of small-pox &c. on board. The utility of this arrangement was shortly afterwards illustrated by the arrival of the steamship *Scot* with two cases of small-pox on board, the cases being removed and the ship disinfected before she proceeded to dock. Under the head of "Nuisances" Mr. Harris refers to the very small amount of cubic space (72 ft. per head) allowed by the Board of Trade, and he thinks that greater attention should be given to the ventilation of crew spaces. We entirely agree with him as to the desirability of ventilation arrangements being such as to preclude the possibility of the ventilators being stopped up by the seamen. The storage of paint, oils, &c., in the crew's quarters is another important subject to which Mr. Harris refers, and he points out that it would facilitate the prevention of these nuisances if they could be dealt with under by-laws. Reference is also made in the very interesting report before us to the subject of a Government grant in aid of port sanitary expenses, and Mr. Harris, while obviously recognising the difficulties of Imperial subvention, suggests that the present useless grant which is made to the Board of Trade for quarantine purposes might well form a basis for a port sanitary fund. Under any circumstances we take it we are not likely to hear much more of the Board of Trade grant for quarantine. Mr. Harris points out how the

multiplication of control as exercised by the Customs, the Board of Trade, and the port sanitary authorities must necessarily lead to friction, and advocates the transference of all port sanitary affairs to the proper authority. A full description is given by Mr. Harris of the new hospital ship lately acquired by the port sanitary authority, and photographs of the vessel and its arrangements are furnished.

Bedfordshire County Sanitary District.—The county council of Bedfordshire have not yet taken advantage of the powers vested in them to appoint a medical officer of health, but they have retained the services of Dr. Leonard Wilde as their "medical adviser," and one of Dr. Wilde's duties is to submit an annual report upon the sanitary condition of the county as evidenced in the annual reports of the district medical officers of health. Dr. Wilde has found considerable difficulty in dealing with the statistical returns of the county, inasmuch as several districts are partly in counties other than Bedfordshire. This difficulty will have been in large part got over by next year owing to the operations of the Local Government Act of 1894. In regard to the district reports, Dr. Wilde states that certain of them cannot be considered very satisfactory, since they contain little else than the death-rate and the sickness-rate. The majority of the reports are, however, we are told, excellent, and filled with valuable information. Diphtheria did not during 1893 assume epidemic proportions anywhere in the county, and only 45 deaths were attributed to the disease. The prevalence of enteric fever in the several districts of the county is shown in the annexed table. It will be seen that the Wellingborough rural sanitary district possesses by far the highest number of attacks.

District.	Population.	Number of cases.	Number of deaths.	Case rate per 1000 population.
URBAN.				
Bedford	29,562	5	0	0·16
Biggleswade	4,860	1	0	0·20
Leighton Buzzard	6,754	3	0	0·44
Luton	30,600	27	15	0·83
RURAL.				
Ampthill	—	3	1	—
Bedford	23,260	11	2	0·47
Biggleswade	20,959	6	0	0·28
Leighton Buzzard	11,882	6	4	0·50
Luton	9,732	2	0	0·20
St. Neots	10,860	4	1	0·36
Wellingborough	19,802	71	8	3·58

Six sanitary districts, three urban and three rural, with an aggregate population of 62,060, have so far declined to adopt the Notification Act. Dr. Wilde regards the notification of erysipelas as needless expense, and he evidently rather leans towards the inclusion of measles in the list of notifiable diseases; and in this connexion he quotes the opinion of the medical officer of health for Birkenhead, that "the advantages derived from notification fully justify the continuance of it." Little or no progress seems to have been made in Bedfordshire in 1893 in the matter of hospital provision, and Dr. Wilde thinks that the county council might with advantage bring into operation the provisions of the Isolation Hospitals Act, 1893. In dealing with water supply he reports that a great improvement has been effected in some of the rural sanitary districts by the sinking of new wells and the addition of a Berkfeld filter pump. He states that special reports are alluded to by many medical officers of health in their annual reports, but that none of these special reports have reached the county council. This seems hardly in keeping with Section 19 of the Local Government Act, 1888. As regards food adulteration, it seems that save in the case of Luton, where twenty-six samples of food were submitted for analysis, no mention is made in the annual reports of any supervision or inspection of food. We do not find in Dr. Wilde's report any reference to the very important subject of dairies, cowsheds, and milkshops, and it further appears that several of the district reports do not say anything concerning this matter.

Staines Rural Sanitary District.—Mr. Dwight Morris, the medical officer of health for this district, refers in his annual report to the expense of preventing the drainage of parts of his district from reaching the Thames in such a condition as to satisfy the Thames Conservancy Board, and he suggests that this Board, together with the water companies affected by the pollution of the river Thames, should conduct the effluents in question below the water companies' intakes. The general death-rate of the whole sanitary district during 1893 was 14 per 1000, the rates varying in the several parishes from 1·1 in Littleton to 18 in Stanwell. Mr. Morris relates that in one of the parishes in his district a newly arrived butcher called in the sanitary inspector to inspect the drainage of his premises. The inspector discovered that the cesspool of the dwelling-house was in the centre of the slaughter-house, and that it was provided with an open grating. Mr. Morris asks what must have been the condition of the previous tenant's meat; we should expect it to be peculiarly prone to putrefaction. Some good work appears to have been done in parts of the rural sanitary district under the Housing of the Working Classes Act, 1890.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns 6540 births and 3475 deaths were registered during the week ending Nov. 3rd. The annual rate of mortality in these towns, which had risen in the preceding four weeks from 16·0 to 18·5 per 1000, declined again last week to 17·3. In London the rate was 16·4 per 1000, while it averaged 18·0 in the thirty-two provincial towns. The lowest rates in these towns were 10·2 in Croydon, 11·3 in Plymouth, 11·8 in Birkenhead, 12·3 in Norwich, and 13·0 in Leicester; the highest rates, 22·5 in Bolton, 22·6 in Liverpool, 23·8 in Sunderland, 24·0 in Bradford, and 25·4 in Burnley. The 3475 deaths included 385 which were referred to the principal zymotic diseases, against 387 and 394 in the preceding two weeks; of these, 96 resulted from measles, 90 from diphtheria, 81 from diarrhœa, 46 from "fever" (principally enteric), 37 from scarlet fever, 32 from whooping-cough, and 3 from small-pox. No fatal case of any of these diseases occurred in Plymouth; in the other towns they caused the lowest death-rates in Croydon, Swansea, and Birkenhead, and the highest rates in Bradford, Burnley, Brighton, and Gateshead. The greatest mortality from measles occurred in Bradford, Leeds, Sheffield, Portsmouth, and Salford; from scarlet fever in Salford and Huddersfield; from "fever" in Gateshead; and from diarrhœa in Sunderland, Burnley, and Nottingham. The mortality from whooping-cough showed no marked excess in any of the large towns. The 90 deaths from diphtheria included 54 in London, 9 in West Ham, 7 in Manchester, and 3 each in Brighton, Wolverhampton, and Liverpool. Two fatal cases of small-pox were registered in Birmingham and 1 in London, but not one in any other of the thirty-three large towns. There were 48 cases of this disease under treatment in the Metropolitan Asylum Hospitals and in the Highgate Small-pox Hospital on Saturday last, the 3rd inst., against 63, 60, and 50 at the end of the preceding three weeks; 8 new cases were admitted during the week, against 8, 11, and 8 in the preceding three weeks. The number of scarlet fever patients in the Metropolitan Asylum Hospitals and in the London Fever Hospital at the end of the week was 2240, against 2171, 2214, and 2285 on the preceding three Saturdays; 223 new cases were admitted during the week, against 521 and 531 in the preceding two weeks. The deaths referred to diseases of the respiratory organs, which had been 287 and 329 in the preceding two weeks, were again 329 last week, and were 67 below the corrected average. The causes of 50, or 1·4 per cent., of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Portsmouth, Bristol, Cardiff, Nottingham, and in fifteen other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Leicester, Preston, and Sheffield.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 17·5 and 18·5 per 1000 in the preceding two weeks, further rose to 22·2 during the week ending Nov. 3rd, and exceeded by 4·9 per 1000 the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 10·3 in Perth and 16·3 in Paisley to 23·4 in Edinburgh and 30·0 in Greenock. The 632 deaths in these towns included 14 which were referred to diphtheria, 10 to "fever," 9 to whooping-cough, 9 to measles, 7 to scarlet fever, 5 to

diarrhœa, and not one to small-pox. In all, 54 deaths resulted from these principal zymotic diseases, against 44 and 55 in the preceding two weeks. These 54 deaths were equal to an annual rate of 1·9 per 1000, which corresponded with the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of diphtheria, which had been 10, 10, and 6 in the preceding three weeks, rose again to 14 last week, of which 6 occurred in Glasgow, 3 in Greenock, and 2 in Edinburgh. The deaths referred to different forms of "fever," which had been 2 and 7 in the preceding two weeks, further increased to 10 last week, of which 6 were recorded in Glasgow, 2 in Edinburgh, and 2 in Aberdeen. The 9 fatal cases of measles also showed a further increase upon recent weekly numbers, and included 8 in Glasgow. The deaths from whooping-cough, which had been 5 and 8 in the preceding two weeks, were 9 last week, of which 5 occurred in Glasgow. The fatal cases of scarlet fever, which had been 6 and 12 in the preceding two weeks, declined again to 7 last week, and included 4 in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 96 and 114 in the preceding two weeks, further rose to 144 last week, and exceeded by 41 the number in the corresponding period of last year. The causes of 60, or more than 9 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 18·0 and 22·4 per 1000 in the preceding two weeks, further rose to 23·9 during the week ending Nov. 3rd. During the past five weeks of the current quarter the death-rate in the city has averaged 21·9 per 1000, against 16·2 in London and 19·2 in Edinburgh. The 160 deaths registered in Dublin during the week under notice showed an increase of 10 upon the number in the previous week, and included 11 which were referred to the principal zymotic diseases, against 16 in each of the preceding two weeks; of these, 5 resulted from diarrhœa, 3 from "fever," 1 from small-pox, 1 from measles, 1 from whooping-cough, and not one either from measles or from diphtheria. These 11 deaths were equal to an annual rate of 1·6 per 1000, the zymotic death-rate during the same period being 1·6 in London and 1·3 in Edinburgh. The fatal cases of diarrhœa, which had been 9 and 7 in the preceding two weeks, further declined to 5 last week. The deaths referred to various forms of "fever," which had been 7, 4, and 3 in the preceding three weeks, were again 3 last week. One fatal case of small-pox was recorded last week, making 13 deaths from this disease within the city since the beginning of October. The 160 deaths in Dublin last week included 18 of infants under one year of age, and 42 of persons aged upwards of sixty years; the deaths of infants were fewer than in any recent week, while those of elderly persons showed a further increase upon those recorded in the preceding two weeks. Four inquest cases and 2 deaths from violence were registered; and 62, or more than a third, of the deaths occurred in public institutions. The causes of 12, or nearly 8 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

MOVEMENTS OF THE MEDICAL STAFF.

THE following officers have arrived from India in the *Victoria:* Brigade-Surgeon-Lieutenant-Colonel Williamson, Surgeon-Majors Boulger and Barnes, and Surgeon-Captain Scott. Surgeon-Captain Morgan has arrived from Egypt on completion of a tour of service, and Surgeon-Major Kirkpatrick from Malta. Surgeon-Captains Pinches and Reilly have arrived in Egypt.

ARMY MEDICAL STAFF.

The undermentioned Surgeon-Majors have been appointed Surgeon-Lieutenant-Colonels: Barnard William Wellings; Robert Smith, M.B.; Francis Wollaston Trevor, M.B.; Harvie Scott, M.B.; James McGann; James Powell; Sidney Herbert Carter, M.B.; William Allan May; George Deane Bourke; John Hoysted; William Campbell, M.B., Grenadier Guards; James S. Forrester, F.R.C.S. Edin., 1st Life Guards.

INDIA AND THE INDIAN MEDICAL SERVICES.

Surgeon-Captain S. H. Henderson, Officiating Civil Surgeon, Banda, is appointed to officiate as Superintendent, Central Prison, Allahabad. Surgeon-Captain J. M. Crawford, Officiating Superintendent, Central Prison, Allahabad, is appointed to the Medical Charge of the Camp of his Excellency the Lieutenant Governor and Chief Commissioner. Brigade-Surgeon C. T. Peters and Surgeon-Major C. Monks have respectively delivered over and received charge of the office of the Superintendent of Mahableshwar. Surgeon-Lieutenant Leumann, I.M.S., is transferred from Poona to Satara, for duty with the 10th Bombay Infantry. Brigade-Surgeon-Lieutenant-Colonel Gaffney, Surgeon-Lieutenant-Colonel Paterson, Surgeon-Colonel Cleghorn, and Colonel Pennington, C.B., are granted good service pensions with special additional pensions of £250. Surgeon-Major Robertson, British Agent at Gilgit, has arrived at Simla on return from leave to England. Surgeon-Major Wallis, A.M.S., on return from leave to England, is transferred to general duty, Sind district. Surgeon-Captain Buist, A.M.S., on arrival from England, is posted to general duty, Poona district. Surgeon-Lieutenant Marder, A.M.S., on arrival from England, is posted to general duty, Aden district.

NAVAL MEDICAL SERVICES.

Staff-Surgeon Theodore Julian Preston has been promoted to the rank of Fleet Surgeon in Her Majesty's Fleet. The following appointments are notified:—Staff-Surgeon Henry S. Jackson, to the *Edinburgh.* Surgeons: Morris C. Langford, to the *Pembroke;* R. A. Kirby, B.A., to the *Defiance;* Edward A. Rogers, to the *Lion;* and Edward T. Meagher, to the *Peacock.*

MILITIA MEDICAL STAFF CORPS.

T. W. G. Kelly, M.D., has been appointed Surgeon-Lieutenant.

VOLUNTEER CORPS.

The following appointments have been notified:—*Artillery:* 2nd Sussex: Surgeon-Lieutenant E. Downes, M.D., to be Surgeon-Captain. 1st Northumberland (Western Division, Royal Artillery): John Wreford, Gent., to be Surgeon-Lieutenant. *Rifle:* 1st Roxburgh and Selkirk (the Border): Surgeon-Lieutenant W. Hume, M.B., resigns his commission. 2nd Volunteer Battalion, the Royal Sussex Regiment: Surgeon-Captain W. M. Vores, M.B., from the 2nd Volunteer Battalion, the Norfolk Regiment, to be Surgeon-Captain. 2nd Volunteer Battalion, the Queen's Own (Royal West Kent Regiment): Surgeon-Lieutenant F. Croucher, M.B., resigns his commission. 5th (West) Middlesex: William Barter, M.D., to be Surgeon-Lieutenant. 2nd Volunteer Battalion, the Durham Light Infantry: Thos. Livingstone, M.D., to be Surgeon-Lieutenant.

VOLUNTEER MEDICAL STAFF CORPS.

Surgeon-Captain Denis M. O'Callaghan, Army Medical Staff, has been appointed as Adjutant, in succession to Surgeon-Captain Julian P. S. Hayes, whose term of office has expired.

PROMOTION IN THE ARMY MEDICAL SERVICE.

The slowness of promotion in the Army Medical Staff, and, indeed, in the army generally, at the present time is a subject of general remark. The *United Service Gazette* notes, as examples of the slowness of promotion in the medical service, that the senior Surgeon-Colonel has over thirty-six years' service and the senior Brigade-Surgeon-Lieutenant-Colonel over thirty years' service, while the Surgeon-Lieutenant-Colonel last promoted has over twenty-six years' service. According to all we have read and heard, the prospects for those entering Woolwich with a view to commissions in the other scientific branches of the service—the Royal Engineers and Royal Artillery—are also the reverse of exhilarating. There is at present a great block of promotion in these corps. More cadets have been taken into the Royal Military Academy than were sufficient to fill vacancies. The establishment of officers cannot be exceeded. The cadets passing out of Woolwich, instead of being commissioned, as heretofore, have consequently to return to their parents and be idle for months and then to go through the course at Chatham or Shoeburyness at their own expense before they are gazetted, a thing unheard of before and unsatisfactory to all concerned. Something will have to be done, and that soon, if the Army Medical Department and other branches of the service are to attract candidates. At present the supply is greatly in excess of the demand, but this condition of affairs is not

calculated to last under existing prospects as regards promotion.

THE FIGHTING ON THE AFGHAN FRONTIER.

The intelligence from India—official and otherwise—regarding the engagement with the Waziris on the morning of the 3rd inst. shows that a determined attack was made on Colonel Turner's camp near Wano and that the fighting was severe, as it was attended with considerable losses on both sides. Colonel Turner's force, which numbered about 2500, altogether lost in killed and wounded nearly 100 men. Among the officers Surgeon-Major Haig, 1st Punjab Cavalry, is mentioned as having been severely wounded. It is, and it always must be, the case that medical officers incur all the risks of field service to which officers of other branches of the service are exposed, as well as other risks to which the latter are not liable. They are consequently entitled to share in all the rewards of war service, and certainly no one can deny that they are always prompt to incur its dangers. We trust we may soon hear that Surgeon-Major Haig is making good progress towards recovery from his wound. Medical officers who took part in the last Afghan campaigns will readily appreciate the description given of the late attack, as it will serve to remind them of the features and tactics that usually characterise Eastern warfare—especially warfare on the hills of Afghanistan.

THE RECENT OUTBREAK OF PLAGUE AT HONG-KONG.

We are glad to notice that the very great services rendered to the community at Hong-Kong during the recent outbreak of plague by volunteers from the Shropshire Regiment, the medical staff, the permanent committee, the civil volunteers' hospital nurses, and others, have been enthusiastically recognised at a public meeting presided over by his Excellency the Governor of the colony. It may be, as indeed it has been, said that it forms no part of the duty of a regiment to undertake work of this kind, but it is by manifesting a spirit of this sort that as a nation we are what we are. Officers and men of the Shropshire Regiment, animated by a sense of humanity and public duty, at once came forward and volunteered their aid at a time of great need and under very different circumstances from, and to the majority of men more trying than, those of war. They rendered services which were recognised as invaluable at the time, and by their disregard of the risks they encountered in the performance of them they displayed a spirit and set an example the effect of the loss of which it would not be easy to calculate.

THE SANITATION OF ALDERSHOT CAMP.

We notice that our service contemporary, the *Army and Navy Gazette*, referring to this subject, states that the question of the disposal of Aldershot Camp sewage has been under discussion for some time between the Treasury authorities and the Aldershot local board. It seems, however, that no definite arrangement has yet been arrived at owing to financial difficulties that are alleged to have arisen in connexion with a conjoint scheme of sewage disposal. On this matter we cannot, of course, presume to enter, but it does not affect the sanitary aspect of the case, on which we have previously expressed our opinion. The present sewage farm at Aldershot is confessedly inadequate and unsuitable for the requirements of the camp, and has been a frequent subject of complaint. Very extensive works in the way of building and reconstruction have been carried out at Aldershot, and the question of the drainage and disposal of the camp sewage has obviously become a most important one, and one which presses for settlement.

SURGEON-MAJOR-GENERAL PINKERTON, M.D., F.F.P.S. GLASG.

Surgeon-Major-General Pinkerton, who has just been elected a Fellow of the Faculty of Physicians and Surgeons of Glasgow without examination, under a rule by which the Faculty may annually admit to the Fellowship not more than four legally qualified practitioners who may have highly distinguished themselves in Medical Science or Practice, entered the Indian Medical Service in 1855. He was Superintendent-General of the Vaccination Department of the Bombay Presidency from 1868 to 1876, and drafted the first Vaccination Bill for India, which became law in 1877. He also held the charge of the European General Hospital in Bombay city. When he retired in 1893 he was a member of the Legislative Council of the Presidency, and received the good service pension. Since his retirement he has been appointed Honorary Physician to the Queen.

THE TREATMENT OF WOUNDED SOLDIERS.

The Commander-in-Chief has issued an army order to the effect that officers and soldiers should be acquainted with the nature and component parts of the first field dressing. General officers commanding are consequently directed to arrange free lectures to be given by medical officers on the subject to officers, warrant officers, non-commissioned officers, and men during the winter months.

DEATHS IN THE SERVICES.

Fleet Surgeon Frederick McClement, M.D. Q.U.I. He entered the Navy in 1867, served in the *Eclipse* during the Egyptian war, and received the Egyptian medal and Khedive's bronze medal. Surgeon Basil Robertson Clarke, M.R.C.S., L.R.C.P., R.N., of the *Melita*, died at Port Said, on the 13th ult., aged twenty-seven years.

The Greenwich Hospital Pension of £50 a year for Staff and Fleet Surgeons of the Royal Navy, rendered vacant by the death of Fleet Surgeon Hugh T. S. Beveridge, M.D., has been awarded to Fleet Surgeon Frederic Harvey.

The *Malabar* sailed from Bombay on Oct. 16th with eighty-seven patients for Netley.

The hired transport *Victoria* arrived at Portsmouth on Nov. 1st with 116 patients for Netley.

Correspondence.

"Audi alteram partem."

"THE PAY SYSTEM AND THE GREAT NORTHERN CENTRAL HOSPITAL."

To the Editors of THE LANCET.

SIRS,—It is very satisfactory to find, from a letter of Mr. Spencer Watson's in your last issue, that one member of this hospital staff, at any rate, has the courage of his convictions. Some time ago a similar proposal was made with regard to the hospital of which I have had the honour of being surgeon for many years; but the unanimous hostility of the medical staff was so strong as to prevent the proposal from being carried into effect. It is perfectly monstrous for the physicians and surgeons of a public hospital to attend gratuitously patients who are known to be able to pay medical fees from the very fact of their paying for hospital accommodation. Your sagacious remarks on this subject deserve most careful consideration, and I trust the staff of the Great Northern Central Hospital will not be so weak as to be led to commit such a fraud upon the neighbouring practitioners as such proposed gratuitous attendance will involve. If they do so it is, I think, abundantly clear that the members of the staff will be the first to suffer from their want of moral courage—and that materially—in the estimation of their professional brethren throughout the country.

I am, Sirs, yours faithfully,

Hanley, Oct. 29th, 1894. W. D. SPANTON, F.R.C.S. Eng.

To the Editors of THE LANCET.

SIRS,—I shall feel obliged if you will kindly insert the enclosed correspondence in the interests of the medical profession.—I am, Sirs, yours faithfully,

H. F. BURNES, M.R.C.P.,

Haycote, Dent, Yorks, Oct. 31st, 1894. Medical Officer for Dent.

[COPY.]

Haycote, Dent, Yorks, Oct. 22nd, 1894.

GENTLEMEN,—On reading Saturday's issue of THE LANCET I find that your Committee has or is about to open pay wards at the hospital, and that the consulting staff will give their services free. As a member of the Council, I beg to protest most strongly against such a procedure as manifestly unfair and unjust to both subscribers and the intended recipients of the charity, besides which the cruel injustice which would be levied upon local practitioners, depriving them wholesale of their patients and making the chances of a livelihood more scanty than before, is altogether intolerable. Nor does the evil to the outside practitioners stop here, for what is more probable than after a paying patient has been successfully treated in the hospital he should in any future illness call in the aid of one of the visiting staff who attended the patient in hospital, thus altogether depriving the previous doctor of his patient, and giving to the hospital doctor an undue advantage over his professional brethren. Surely mischief enough has been done by the indiscriminate medical aid already afforded to the public, without adding this greater injury to the struggling members of the medical profession. On more than one occasion I have advocated letters of recommendation, which would be some check on prostituting

the institution and repressing a certain amount of hospital mendicity amongst the well-to-do. When I subscribed thirty guineas to the hospital it was given to support an institution for the sick poor alone; however, should the committee permit the existence of pay wards, I shall certainly call upon them to refund my subscription of thirty guineas, to be paid over to such charitable institution as I may hereafter decide. Yours faithfully,

HENRY FOSTER BURNES, M.R.C.P., &c.,
Medical Officer for Dent.

To the Chairman and Committee of the Great Northern Central Hospital, London.

[COPY.]

Great Northern Central Hospital, Holloway-road, N.,
Oct. 23rd, 1894.

DEAR SIR,—I beg to acknowledge the receipt of your letter of the 22nd inst., which I will lay before the Committee of Management at their next meeting, on Friday, Nov. 2nd.

Yours truly,
LEWIS H. STRUTOWKER, Secretary.

To H. F. Burnes, Esq., M.R.C.P., Haycote, Dent, Yorks.

"THE ADMINISTRATION OF ARSENIC."

To the Editors of THE LANCET.

SIRS,—On referring to the abstract of the proceedings of the Liverpool Medical Institution forwarded to you by its honorary secretary, and referred to by Dr. John Livy in THE LANCET of Nov. 3rd, I do not find it reported that several of the speakers affirmed, as he says they did, "that it is impossible to detect arsenic when only medicinal doses are given." So far was this from being the case that at least two of them—viz., Mr. F. W. Lowndes and myself—mentioned cases where it was detected both by Reinsch's and Marsh's tests. What they did state was that it was impossible in their opinion to detect the presence of arsenic when given in medicinal doses by what in the abstract is alluded to as "the rough test." This "rough test" was fully described in my paper, and consisted of acidifying nearly a fluid ounce of unconcentrated urine, in which had been immersed a piece of copper wire, and then simply raising it to the boiling point—the whole process from beginning to end not occupying more than two minutes. This was a rougher test than the one by which Dr. Livy states that he himself failed to detect it, and yet it was one which was considered conclusive against the possibility of Mr. James Maybrick having "taken a serious or fatal dose" of the poison within a fortnight before the test was applied, because its results were negative in the hands of Dr. Humphreys, as they probably would have been in the hands of the most expert chemist living.—I am, Sirs, yours faithfully,

Liverpool, Nov. 3rd, 1894. WILLIAM CARTER.

"THE REMUNERATION OF MEDICAL WITNESSES."

To the Editors of THE LANCET.

SIRS,—I am pleased that another effort is being made to increase the fees to medical men for evidence in criminal cases. I hope the Police Surgeons' Association will be successful. For years I have felt that the fees were totally inadequate for the services rendered and were a great loss to a man in busy practice. I have for a long time avoided police cases in consequence, and when I have by any chance had a case in the police-court it has been because I could not avoid it. Although the courtesy of the bench, solicitors, and magistrate's clerk not to detain a medical witness longer than necessary is common, yet 10*s.* 6*d.* as a fee and a prospect of a journey to assizes for a guinea per day are not sufficient in the present day. I once attended the assizes in Liverpool for five days; I was not able to visit a patient during the time, leaving home early and being back late; I had to pay a locum tenens. At the end of the time I asked for a special fee, as I was retained for special evidence, with the result that the Crown could not allow it. I probably had been a little extravagant with my friends, but I had only a few shillings left after I had paid my expenses. As far back as 1887 Mr. Brady of Wigan, who had to attend the assizes in Liverpool, presented a petition from the medical men of Wigan to the grand jury, and, I believe, also to the judge. I also brought the subject before the Branch of the British Medical Association, and we got a promise that the parent association would move in the matter, yet seven years are gone and we are still in the same position. Unless a universal cry is raised I am afraid we shall be in the same position seven years hence. There cannot be a doubt that for a man in private practice one guinea per day is totally inadequate, no matter how small his practice may be; for house surgeons and those holding public appointments the matter is a little different, and no harm would be done by having a scale of fees. I must say that since our petition a better arrangement has been made at the Liverpool assizes, so as to allow the practitioner to attend only on the day his case is called when this is possible.

I am, Sirs, yours faithfully,
Wigan, Nov. 5th, 1894. WM. BERRY, F.R.C.S. Irel.

To the Editors of THE LANCET.

SIRS,—Will you permit me to give my experience *re* the remuneration of medical witnesses, as I have had some little experience both of the Scotch and English systems? For three or four years I was criminal reporting surgeon for the western district of Perthshire, when I had occasion to be sent on long journeys to investigate criminal cases and cases of sudden death. Though I have resided in England over thirty years my criminal work has happily been limited. Last year, however, I had the rather unique experience of having been called upon to attend every assize at Warwick (three in number). Twice I was detained three days and once two days. Now let me detail the procedure in each set of cases. Warwick is fairly convenient to get at from here, but as you have to put in a morning appearance under a threat of a heavy penalty it comes of necessity that you must leave home early and so are able to do but little work before starting. When you arrive at the court-house a mild chaos exists; the solicitors or their clerks run a race as to who shall get his bill first before the grand jury. As the various cases are taken in no order, it is not safe to leave the precincts of the court, and you may be kept hours waiting before you are called before the grand jury. When this ordeal is passed there is no certainty which day your case will be called, and that in spite of every effort on the part of the officials to give you information—and here I will take this opportunity of cordially thanking the members of the Bar and solicitors for their courtesy and kind help in forwarding as far as they can your case and seeing that you are put to the least possible inconvenience. Now, as to payment; I received a daily fee of £1 1*s.* and second-class fare one way. Now I do not profess to have a large practice, but it unfortunately happened that twice I had a considerable number of patients down with influenza—one man suffering from acute mania. I need not go into figures about my loss, but my assize experience spells a considerable pecuniary balance to the bad. Now let me contrast the mode of payment in Scotland. When a medical witness is called upon by the procurator fiscal to give evidence that official calls and takes what is called a "recognition." This may be long or short, but for this a fee of £1 1*s.* is granted, and if a post-mortem examination is thought necessary an additional fee is given for it. If the case has to be seen at a distance of over one mile from the reporter's residence, £2 2*s.* are allowed for the report. If evidence has to be supplemented an additional fee is given. When the case goes to the circuit court the witness is allowed £2 2*s.* per diem and one day extra: thus, he gets £4 4*s.* at least for one day, £6 6*s.* for two days, and so on. Now, Sirs, I ask if Scotland can pay these fees, why not England? To me it seems that the matter only wants fairly putting before the authorities, as both the miserable payment and the hardship of taking away a medical man from his work are universally admitted. I for one shall be most happy to give my aid in helping to alter matters. Let us make a strong protest or none at all, and I would suggest that we call in the aid of our able representative, Dr. Glover, who I am sure would gladly give us his influential aid. Apologising for trespassing on your valuable space,

I am, Sirs, yours faithfully,
JAMES HAIR, M.D., F.F.P.S.G.,
Formerly Criminal Reporting Surgeon for the
Brinklow, Nov. 5th, 1894. Western District of Perthshire, &c.

To the Editors of THE LANCET.

SIRS,—In connexion with the above subject Dr. Thomas Mackenzie, of Douglas, Isle of Man, has brought to my notice the curious fact that in Manxland the fee for attendance and giving evidence at an inquest is only 15*s.* 6*d.*, instead of the guinea to which we are universally accustomed in other parts of the United Kingdom. My correspondent is of opinion that it is only necessary for attention to be drawn to this anomaly in the columns of THE LANCET in order to have it rectified, and as I hope with

him that this may be the case, I feel sure you will assist us by giving publicity to the matter. Of course, if this does not succeed, our association will feel bound to make a representation on the subject to the Home Secretary.

I am, Sirs, yours faithfully,

H. NELSON HARDY,

Treasurer of the United Kingdom Police Surgeons' Association.

Dulwich-grove, S.E., Nov. 7th, 1894.

EPIDEMIC SKIN DISEASE AND THE LAY PRESS.

To the Editors of THE LANCET.

SIRS,—When I wrote to you on Oct. 13th disclaiming any connexion with an article which appeared in the *Pall Mall Gazette* of Oct. 11th, containing a *précis* of my monograph on Epidemic Skin Disease, I stated my belief that it would hardly be necessary to trouble you to publish my letter, as it seemed to me sufficiently obvious to anyone who read it closely that I could not be held in any way responsible for that article. Subsequent events have shown me, however, that a public disavowal is desirable, and I should esteem it a favour if you could find a place for this in your columns. Enclosed I beg to forward for your perusal a letter addressed to me by the assistant editor of the *Pall Mall Gazette* stating "that the article in the *Pall Mall Gazette* of Oct. 11th on the New Skin Disease was not published at your instigation or suggestion, and, so far as I know, you read it, like the rest of the world, first in our columns. The writer was never in communication with you, and was, and is still, unknown to you." The article was published entirely without my knowledge, consent, or approval.

I am, Sirs, your obedient servant,

THOMAS D. SAVILL, M.D.

Upper Berkeley-street, W., Nov. 6th, 1894.

"THE ETIOLOGY OF TYPHOID FEVER."

To the Editors of THE LANCET.

SIRS,—I can fully corroborate Dr. Kenwood's opinion as expressed in his letter to you in your last issue with reference to the etiology of typhoid fever. I held the post of medical officer of health to the borough of Lewes for nearly twenty years, and during that period observed numerous sporadic cases in which it was utterly impossible to trace a cause from previous cases. It is true that Lewes suffered from a severe epidemic of typhoid fever just twenty years ago, since which time, in consequence of sweeping changes in sanitary matters, the disease has been conspicuous by its absence, so that an origin from that remote period might be safely eliminated. Bacteriology may be, and possibly is, doing much, yet there are among us, as Dr. Kenwood says, many who still believe cases may arise without infection from a previous case.

I am, Sirs, yours obediently,

J. G. BRADEN, M.R.C.S., &c.,

Fellow of the Society of Medical Officers of Health.

St. Margaret's-at-Cliffe, Nov. 6th, 1894.

"COMMON DISEASES MISTAKEN OR MISTREATED."

To the Editors of THE LANCET.

SIRS,—A portion of Dr. Goodhart's interesting address published in THE LANCET of Oct. 13th refers so obviously to my writings that I hope I may be allowed a few lines to defend my position on the principle of your well-known motto of fair play. Though at first sight one might regard it as an honour that one's pages should have the attention of such a well known physician, this feeling is considerably damped down on observing that the address refers especially to mistakes and mistreatment; and still more so when it is said that someone has experimented on himself and then gone and preached a universal rule, ignoring the very first principle of the art of medicine. If this applies to me—and it follows close on several lines which are entirely made up of the chapter headings of my book—Uric Acid as a Factor in the Causation of Disease,—I can only reply that I will undertake to produce either with diet, drugs, or uric acid itself, in anyone who will lend the necessary *corpus vile* in a condition of good physiological activity, results which would readily be acknowledged to be identical with those I have obtained in myself; and anyone who reads my book carefully will see that, to a considerable extent, this has already been done.

I am quite aware that drugs may produce different effects in different individuals, or in different conditions of one and the same individual—e.g., chloroform; but this is generally due to very simple causes, and does not often require us to postulate the unknown quantity, individualism. Thus, salicylate of soda will produce slightly differing physiological effects, according to the amount of uric acid it meets with. Again, the effects of opium may be determined by the presence or absence of diarrhœa or intestinal ulceration; and even a glass of water will produce different effects on the flow of urine, according to the condition of the renal arterioles when it is administered; thus, relax them by a dose of calomel or the primary action of a dose of opium, and a glass of water will cause an immediate diuresis; on the other hand contract them by the secondary action of opium, and there will hardly be any increased flow of urine. If beyond these things there is still an unknown individualism I believe that further knowledge will reduce it to the very smallest dimensions, and even now I often regard the human test tube as but little less reliable than the chemist's instrument of glass. Introduce the same drug under the same conditions, and the same reaction will appear.

Dr. Goodhart says, Is it possible that all these things are produced by uric acid? I believe that it is quite possible; for though the names of these diseases are many, the effects of uric acid in producing them are few; thus local irritation of tissues accounts for gout and rheumatism, while the effects of uric acid on the arterioles and capillaries, and so on the circulation and nutrition of the body, will satisfactorily account for all the rest. It does not of necessity follow that we should escape all these diseases if we became vegetarians, for the liability of young women to anæmia and of children to rheumatism is, in part at least, due to the active metabolism of childhood, which entails a large formation of urates; but even here diet and the introduction of urates count for a good deal (as observed by Bouchard and others), and may in many cases just suffice to make the difference between health and disease. I should be quite willing to admit that diet is a product of evolution; but surely evolution turns out both useful and harmful variations, while selection perpetuates the one and eliminates the other; and it has yet to be decided whether we are to keep on with our present diet or return to that which was in use at the beginning of the century. In Persia gout is known as the disease of the rich, as in that country only the rich eat meat. In this country meat eating has gradually spread down to the lowest classes, especially in towns, and with it have come gout and its kindred diseases: the great majority suffer in some way, and those are most fortunate whose troubles most quickly oblige them to return to the habits of their fathers and grandfathers. Quite a large number of men in various countries are now investigating the possibility of the causation of disease by uric acid, and when my own researches are complete, which is by no means the case yet, I shall wait these results with every confidence; and I have already mentioned the results obtained by many fellow-workers. One of these is now investigating the diet relationships of stone in India, and what he has already told me lends but little support either to Dr. Goodhart's facts or his conclusions on the subject.

Dr. Goodhart is very certain that persistence in a rigid form of dieting does harm in some cases; I can only say that diet has cured me and made it possible for me to live and work in comparative comfort, and I could now easily give a number of similar cases from the ranks of the profession alone. I am aware, however, that in running headlong from Scylla it is possible to get too close to Charybdis, but that hardly proves that there is no *via media* of safety. The object which I at the present time hope to achieve by diet is rather to stop the unnecessary introduction of uric acid into the body than to aid its elimination, though one effect of diminished introduction is increased elimination, and, conversely, increased introduction produces diminished elimination, which accounts for Dr. Goodhart's observation on the effects of more meat in children who are "uric-acid passers." If, however, as Dr. Goodhart suggests, uric acid is an effect, not a cause, it follows that uric acid is itself a harmless substance, and can be taken to any extent without effect on the circulation or nutrition. I have often taken a little uric acid, and if it is harmless there is no drug in the Pharmacopœia toxic, for, like any drug, its evil effects can be demonstrated

simply by swallowing it, and if many of Dr. Goodhart's hearers are unwise enough to try large doses we may look for some rapid promotion.

I am, Sirs, yours faithfully,

Brook-street, W., Oct. 23rd, 1894. ALEXANDER HAIG.

INOCULATION OF INFECTIOUS DISEASES.

To the Editors of THE LANCET.

SIRS,—The inoculation of any infectious disease necessarily tends to multiply that disease. As the cases increase so does the danger of infection increase. This is so alike in man and in animals. The relations between these and the laws of their evolution are as yet very imperfectly understood; but that such relations do exist has been observed from the time of Homer:

> "In dogs and mules the murrain first began;
> At length the dire infection spread to man."

The artificial inoculation of infectious diseases in animals may be a source of real danger to man.

I am, Sirs, yours faithfully,

Savile-row, Oct. 2nd, 1894. HENRY LEE.

"THE POSITION OF THE THEORY OF EVOLUTION."

To the Editors of THE LANCET.

SIRS,—Dr. Campbell's estimate of the ethical value of evolution is true—for a certain class of mind. He is right in maintaining that a belief in determinism leads one to judge more mercifully the faults of others. But does it follow that any such rationalism is of equal value for the moral guidance of common humanity? The religious spirit is a product of evolution, and perhaps one of the most enduring of any. It fulfils its end in providing moral guidance for those to whom reason can never appeal with sufficient force. Hence every enlightened determinist and evolutionist may logically contend that a knowledge of philosophic truth is positively injurious to the morals of those who cannot act uprightly without a "pourboire" in the shape of reward after death.

I am, Sirs, yours faithfully,

Surbiton, Nov. 3rd, 1894. R. H. REYNOLDS.

ST. JOHN AMBULANCE WORK.

To the Editors of THE LANCET.

SIRS,—I shall feel obliged if you will call the attention of the medical men who lecture in the above to an important point that is coming forward. Under the County Council Act there is a clause which enables classes of ambulance work to be paid for by the County Council. As a secretary of a large centre I have declined to lecture under the County Council grant on the ground that such lectures are paid out of the rates and are technical; therefore the lecturers should be paid for the lectures at the usual fee. My object in writing to you is to ask secretaries and medical men generally to abstain from lecturing under, or to classes which are receiving grants from, the County Council unless they are paid the fee of a guinea per lecture. I need not say that the old system still maintains. I think every lecturer, or medical man who has not yet lectured, will fully see the necessity of remaining firm on this point and avoiding a precedent which may involve us in very heavy work without remuneration. The London executive will, I know, support us if we are firm.

I am, Sirs, yours faithfully,

F. J. JUDGE BALDWIN,

Nov. 5th, 1894. Hon. Sec., S.J.A.A., Rotherham.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Presentation to Dr. Ransome, F.R.S.

AN interesting gathering took place in the Lord Mayor's parlour of the Manchester town hall on the 31st ult. of medical men, of members of the Manchester and Salford Sanitary Association, and of other friends on the occasion of a presentation to Dr. Ransome, who has left for Bournemouth. Dr. Simpson presided, and in the course of his speech referred to Dr. Ransome's many services to the cause of sanitation by his writings, by his lectures to students at the Owens College, and more especially perhaps by those given for many years past to the people in the poor parts of the town in connexion with the Sanitary Association. He had been an active and energetic member of this association since 1856 and chairman for the last fourteen years. On behalf of a few of his Manchester friends Dr. Simpson asked his acceptance of a silver inkstand, a pair of candlesticks, and an afternoon tea service. He was followed by Mr. W. Crossley, chairman of the Hospital for Consumption and Diseases of the Throat and Chest, who alluded in warm terms to his services as one of the staff of the hospital, by Dr. Leech, Dr. Sinclair, and Mr. T. C. Abbot, one of the honorary secretaries of the Manchester and Salford Sanitary Association and a member of the City Council, by which body, he said, any memorial or request from the association was received with the greatest respect and courtesy. Dr. Harris said that letters had been received from Lord Derby, Sir W. H. Bailey, and many other gentlemen who were unable to be present. In his reply, Dr. Ransome gave many interesting reminiscences of Manchester in the days of his grandfather and father, both of whom were surgeons to the Royal Infirmary. The former was associated with the late Mr. Turner in founding the Pine-street School of Medicine, "the germ of that magnificent school which now existed at Owens College." His father was "the pupil, friend, and medical attendant of Dr. Dalton, whom he (Dr. Ransome) remembered." He referred also to the successful efforts he made many years ago to obtain registration of disease. This was done in Manchester by the voluntary aid of thirty or forty medical men connected with the various institutions. "To the honour of the medical profession in Manchester that return was continued for twenty years, and it was really the foundation of that national notification of disease which was going on now throughout the whole of England." Mr. T. C. Horsfall, in moving a vote of thanks to Dr. Simpson, expressed his gratification that he was to succeed Dr. Ransome as chairman of the Sanitary Association.

Opening of the New Medical Buildings at Owens College.

These extensive and well-arranged buildings were opened on Oct. 30th by the Duke of Devonshire, President of the College, who was accompanied by the Duchess. Travelling by special train from Rowsby, they were met at the Central Station by Principal Ward and Dr. Leech, and arrived at the College about noon. After being received in the library by members of the governing and teaching bodies, a procession was formed to the chemistry theatre, where the Duke, attired in his robes, took his seat as President of the College on this his first official visit. An address of welcome was presented to the Duke by the Principal, and other addresses followed. In his reply the Duke confessed that he accepted the position of President with some hesitation—even reluctance—partly because his former intimate connexion with Lancashire, partly social, partly political, had ceased and was not likely to be in the future so close and intimate as it had been in the past. But it proceeded still more from his feeling that he could lay no claim to have such scientific and literary attainments as they had a right to expect from their president. After the proceedings in the chemical theatre the Duke and Duchess were conducted to the new medical buildings. A large gathering took place in the physiology theatre of the teaching staff, of visitors, and a numerous demonstrative body of students. Here other addresses were presented to the Duke, and at the close of his reply he declared the new buildings open, and expressed his wish for their prosperous and successful career. At two o'clock a luncheon took place in the College, at which about eighty sat down. After the luncheon the Duke, in response to his health, gave an interesting account of the great changes that, within his own recollection, had taken place in Lancashire as to mode of life, the thirst for knowledge, and the opportunities for its acquisition. When the luncheon was concluded, there was another adjournment to the new buildings, where a reception (to which about 3500 invitations were sent out) was held. From the crowded condition of the staircase and corridors it seemed as if all those invited were present. The Duke and Duchess of Devonshire and Principal Ward went through their fatiguing duties with exemplary patience and great power of endurance, and it must have been a relief when the ceremony came to an end.

It has, however, been a memorable day for Owens College and for Lancashire, and the advantages that must accrue to the students, not only of to-day but of the future, from what this day commemorates are such as their fathers could not even dream of. If science grows apace the appliances and means aiding its pursuit are likewise growing as they never grew before. With regard to the architectural character of the buildings, this, while harmonising generally with the adjoining buildings, has necessarily a rather distinct character owing to the large amount of window light, which has been a prime consideration. The greater part of them is devoted to the departments of physiology, pathology, toxicology, anatomy, and public health. The physiological section includes a lecture theatre for 350 students, with preparation and diagram rooms adjacent; a large laboratory for practical physiology, provided with all apparatus necessary for instruction; a galvanometer room; rooms for photography, for the use of the ophthalmoscope and optical experiments, and for gas analysis; and a large histological laboratory, lighted on three sides, for the performance of practical work by students in histology and microscopy. There are also laboratories for practical pathology, bacteriology, pathological chemistry, toxicology, and sanitary chemistry. Separate rooms and laboratories for original work by advanced students and medical practitioners are a special feature. Additional anatomical class rooms have been provided, and a lecture theatre for general purposes to accommodate 250 students. The practical laboratories of the public health department are supplemented by a museum of apparatus and models, and a library of works on State medicine, hygiene, and sanitary engineering.

Nov. 6th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Hospital Sunday and Saturday.

THE annual meeting of all those interested in the Hospital Sunday and Saturday Fund was held on the 5th inst., the attendance being better than usual. The report of the committee was very satisfactory. Notwithstanding the depression of trade, which had made the committee anticipate a considerable falling off, the Sunday collections showed an increase of £53 and the donations of £214 over those of 1893. The latter source of income was increased by £250 from a philanthropic citizen, who enjoined strict secrecy regarding his name. The Hospital Saturday boxes also showed a slight increase. Thus the committee were enabled to distribute £10,700 among the medical charities of Liverpool. This exceeds last year's grant by £500, and, excepting 1874 and 1891, is the largest in the history of the Fund. The number of contributing congregations is 310. The total sum of £11,144 was raised at an expense of £531. The Sunday collections involved an expense of £124 only, being just 2 per cent. of the total fund. The expenses for the Hospital Saturday were for obvious reasons more heavy, but still they were moderate.

Liverpool University College.

Though there has been a large increase in the number of students, the increase in the funds has not been equally well marked. The appeal which was made last year for £15,000 to cover the expense of reconstruction of buildings has only realised £8000. The treasurer's report also states that unless the income of the College available for current expenses is considerably augmented this deficiency will continue to increase and lead to financial disaster. It is greatly to be hoped that with improved times we shall have improved finances.

British Hospitals Abroad.

Complaints have been made to the Liverpool Chamber of Commerce that British vessels are too highly taxed with dues for the maintenance of the British hospitals at Smyrna and Constantinople. It was also stated that it was proposed by the Government to erect a new hospital in the suburbs of Smyrna, which would be less convenient for shipping uses than the old one, and that the dues were to be increased. It was also stated that the surplus receipts at Constantinople amounted to £14,000 since January last, and those at Smyrna to £2000 in the same period. It was urged that these charges, which were fixed when the "tonnage" was much smaller, should be lowered or abolished, and that the hospitals should be supported by voluntary contributions as elsewhere.

Rabies at Widnes.

In spite of the vigilance with which the local police have enforced the Muzzling Order in the Widnes district of Lancashire rabies still exists, and on the 29th ult. a brown, cross-bred terrier was shot at the police-station. The veterinary surgeon who examined the body of the dog certified that it had suffered from rabies. A mother and her son, aged five, were both bitten by the animal and have been sent to the Pasteur Institute of Paris. As the husband and father is not in a position to bear the expense (£25), Superintendent Keighley of the local police has kindly opened a subscription list at the Widnes Police-station.

Nov. 7th.

NORTHERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENT.)

Ambulance Work in the North.

THE annual meeting under the auspices of the St. John Ambulance Association in connexion with the Willington Quay and Wallsend Centre of the organisation has been held. The report showed that the mid-Tyne centre of ambulance work, comprising the township of Willington Quay and Wallsend, was established in 1887, and that the number of students, male and female, who had received instruction in rendering first aid to the injured and nursing had been 382—211 at the Willington Quay class and 171 at Wallsend.

Seaham Harbour Infirmary.

A house-to-house collection (the first of the kind) has been made at Seaham Harbour in aid of the infirmary. The idea was suggested by the working men of the town, and by them carried out, with the result that over £11 were gathered. The institution under notice was originally erected for the reception of seamen only by the efforts of Frances Anne, Marchioness of Londonderry, but recently the managing committee decided to admit cases of accident and non-contagious diseases from the town generally, and thus to widen the scope of its usefulness.

Carlisle.

It is stated that the committee of the Cumberland Infirmary have made arrangements for the public opening of the new nurses' wing of the institution on Thursday, Nov. 22nd. Sir Wilfrid Lawson, as President, is expected to preside, and Lady Muncaster has consented to perform the ceremony. It is expected that, among others, there will be present the Lord-Lieutenant of Cumberland, who is patron of the institution, and the Mayor of Carlisle. The nurses' wing has been built at a cost, roughly speaking, of £3000.

Hospital Notes.

The annual report of the Northallerton Cottage Hospital shows that during the year sixty-nine patients were admitted, the cases having been of an unusually serious character. Since Sept. 30th there has been a great strain on the hospital staff, fourteen patients, including four men seriously injured in the railway collision, being under treatment at one time. The finances are in a fairly satisfactory condition.

The governors of the Newcastle Royal Infirmary have agreed to the recommendation of the House Committee, and are about to appoint two additional assistant surgeons.

Newcastle-on-Tyne, Nov. 7th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Edinburgh University General Council.

THE statutory half-yearly meeting of the General Council of the University of Edinburgh was held on the 26th ult. The chair was occupied by Principal Sir William Muir. The most important business was the consideration of the reports by the committee on ordinances. With reference to the draft ordinance dealing with libraries the committee objected to members of the General Council having to pay an annual fee for the use of the University library, and suggested that members of Council using the library should be required to deposit with the librarian a sum of £1 for a certain number of

volumes, and be allowed to increase their drafts on the library on increasing their deposit *pro ratâ*. This report was agreed to. The draft ordinance dealing with the research scholarships and fellowships and the encouragement of research was next considered. The committee in their report say that they are pleased that the Commissioners have realised that "it is desirable to facilitate and encourage special study and research in the universities," but they doubt whether the method proposed will work well. The report says: "Provision certainly ought to be made, as a necessary part of the work of the University on its teaching side, for the training of students in the method and technique of research, which is a necessary preliminary to the actual conduct of independent investigation, but is distinct therefrom. Those who are undergoing this preliminary training might appropriately be styled 'research students,' and be put under supervision, but this work is merely preliminary; while those who are fitted to conduct such a research as might properly deserve a doctorate are entitled to a more independent position, as persons actually doing an integral part of the work of the University in the modern sense of the term, and doctorates should not be conferred except on the report of independent experts. The research establishment of the University properly so called should be under the control of the University court, and should be coördinate with the teaching establishment. The members of the Senatus should be bound to render all needful assistance to the University researchers, but any control that they may have over them should be delegated by the University court." It says finally that the ordinance "mixes up specialised study, training in research under the guidance, instruction, and direction of a professor, and the independent conduct of research as a part of the University work; and it fails to make any definite provision that the interests of research should be attended to. At every turn it is to the interest of the applicant or 'research student' to commend himself to the professor, the faculty, or the committee, and the senators, and it is not his interest to pursue any independent course as an independent investigator. The Commissioners' plan may manufacture University graduates; it will not tend to encourage special study and research in the universities." The ordinance was disapproved by the meeting. The draft ordinance on the qualifications of the candidates for chairs has had objections raised to it in various quarters, and the report of the committee points out that, "in the case of a vacancy in any professorship, the University court shall advertise such vacancy, and shall request candidates to submit evidence of their qualifications. The Senatus Academicus shall thereafter appoint a committee of not more than five of its members, to whom the evidence submitted by the candidates shall be transmitted, and who shall consider the same and present to the patrons of the chair a detailed and reasoned report on the candidate's qualifications. In the opinion of the committee the detailed and reasoned report of the committee of the Senatus is intended to guide the patrons of a chair in their selection of candidates. If it had not that effect its purpose would fail. It therefore appears that the practical effect of the ordinance would be to commit the selection and appointment of professors to a small committee of the Senatus, and on that ground the committee advise the General Council to object to it." The report further points out that the duty of reporting on the qualifications of candidates should be entrusted to a committee of the University court, and that the proposed professorial committee would be a distinctly unsuitable body for the purpose in view. The recommendation of the committee was accepted, and the ordinance disapproved of.

Increase of Small-pox in Edinburgh.

A fresh outbreak of small-pox has taken place during the past week in the High-street district of Edinburgh. Until Friday last there had been thirty-three fresh cases during the week, on Saturday there were ten more, and on Sunday five. The cases are mild in type, but in addition to the patients there are fifty persons isolated. Owing to this fresh outbreak it has been necessary to hurry forward the completion of the temporary hospital in the Queen's Park, the work on which had been stopped. There is necessarily much dissatisfaction felt and expressed with the sanitary authorities, and it is difficult to avoid the suspicion that there has been laxness somewhere. The public look to the sanitary authorities in the city to stamp out an epidemic of this kind, and they do not readily accept excuses.

Women Students.

Dr. Sophia Jex Blake has received a congratulatory address to mark the occasion of the opening by Edinburgh University of the degree of M.D. to women.

Faculty of Physicians and Surgeons, Glasgow.

At its meeting on Monday last (the annual meeting) the Faculty elected Dr. Bruce Goff as President—a graceful recognition of Dr. Goff's eminent services to the Faculty and of his *status* as a "country practitioner." There is no one who has done more for the "country brother" in the past twenty years than Dr. Goff, and his unanimous and enthusiastic appointment to the Presidentship gives the liveliest satisfaction throughout the west of Scotland. At the same meeting Professor James Dunlop was elected Visitor. Dr. James Finlayson, honorary librarian of the Faculty, also had paid to him a very unusual compliment, in being furnished with *carte blanche* as to the purchase of a formidable and probably costly array of the works of the older medical authors, in which the library is supposed to be deficient. No higher proof could be given of the Faculty's trust in the discretion of its honorary librarian.

The Cancer Hospital, Glasgow.

At the same meeting also the Faculty rendered a most important and significant public service in stamping with its disapprobation—and that in a most hearty and unambiguous fashion—the growing tendency to the floating of "special" medical institutions. The above-named hospital was (as usual) started a few years ago and run for a time as a "one-man" institution. Recently (and again quite in keeping with the usual history of such "charities") it has been ostensibly rehabilitated by changes in its staff and by a laudable endeavour to interest public and professional corporations in its management. In particular, a request was made that the Faculty should send two representatives to act as directors on its governing board. This the Faculty has very properly and very decidedly declined to do, indicating in this way the widespread feeling that the "Cancer Hospital" is unworthy of confidence or support, and should, in fact, never have come into existence at all. The Faculty is to be congratulated on having put its foot down in such an emphatic manner.

Hospital Sunday in Glasgow.

This scheme has had only a very qualified success in Glasgow. The Sunday selected, Oct. 28th, was wet and blustering, and congregations were small, while misunderstanding seems to have been very general as to the manner in which the collection was to be made and allocated. Only about two-thirds of the churches have so far given in their reports, and the average per congregation is only £11 3*s.* 9*d.*

Enrolments at the Glasgow University.

It is understood that there will this year be a considerable falling-off in the number of students at the University in all the faculties, the medical included. This is perhaps not to be wondered at, especially as regards medicine, when only twenty-five out of ninety candidates succeeded in passing the medical preliminary examination. The mathematical paper at this examination seems to have been the most fatal, and loud complaints as to its "stiffness" are heard on all hands, particularly from fathers of prospective practitioners.

Dr. D. C. McVail on the Treatment of Bronchitis.

In an address delivered before the Glasgow and West of Scotland Pharmaceutical Association Dr. D. C. McVail freely condemned the present methods of treating bronchitis. "Expectorants," instead of promoting coughing and expectoration, have rather the effect of stopping cough altogether. He maintained that it was only by natural mechanical forces that material in the air tubes could be cleared away.

Greenock Eye Infirmary.

This institution has done much good work in the past year; 2984 patients, varying in age from a few days up to eighty years, were treated. No fewer than 325 patients had received injuries at work, and Dr. Cluckie made the suggestion that all workmen engaged in clipping steel or iron (as in the extensive shipbuilding yards in the district) should wear wire gauze spectacles. The new buildings in which this charity is housed were opened in May last; the total cost, all of which was borne by Mr. Anderson Rodger, shipbuilder, amounted to £2033.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Royal University of Ireland.

A MEETING of Convocation of the University was held last week, presided over by the Vice Chancellor. Owing to the failure of a quorum to attend at the last annual meeting of Convocation no business was transacted and the serious questions in the agenda remained unconsidered. The annual committee report that at the last annual meeting of Convocation the following resolutions were proposed:—1. That it be referred to the annual committee to consider whether the election of senators may, consistently with the provisions of the Charter, be carried out without a meeting of Convocation being held for each election. 2. That the annual committee be instructed to inquire whether it would be desirable and practicable to institute a course of examinations upon the subject of agriculture in connexion with the Royal University. As regards Fellowships, the committee learn with satisfaction that in October, 1894, three Junior Fellowships will be offered for competition among the graduates of the University. With reference to the accessibility of museums and library the committee understand that the museum specimens are for examination purposes only. The University Act specifically directs the establishment of a library in connexion with the University, and the committee regret that the provisions of the Act in this respect have not been complied with. Dr. Thomson said the various matters referred to in the report only came before the senate in the way of suggestion. The three new Fellowships had been competed for, and two of them had been awarded by the senate; there was no competition for the other. The senate established in the faculty of medicine two studentships (value £400), as compared with £800 for the Junior Fellowships. The museums and library were not available for students and graduates. The intention was to provide for a more thorough examination of the students, and not for their instruction. The books also would be largely for the purpose of reference. The University was not in the strictest sense an educational institution. The following resolution was adopted:—"That in order to remove the disqualification imposed by Charter on sex the senate be petitioned to take such steps as shall remove the obnoxious disability by which female graduates are excluded from Convocation of the Royal University of Ireland." It was, however, pointed out that nothing could be done in the matter without going to the House of Commons. The Junior Fellowships were obtained by Mr. William B. Morton, A.M., in mathematics, and by Mr. George Woodburn, A.M., in mental and moral science.

Royal College of Surgeons in Ireland.

The opening of the winter session of the schools of surgery in connexion with the College took place last week. The President, Mr. W. T. Stoker, having distributed the prizes awarded for the past winter and summer sessions, addressed to the students some words of welcome and advice. In the course of his remarks he observed that he would like to say a word about the alleged falling off in the Dublin schools of medicine and surgery. He utterly repudiated the idea that any decadence in the quality of the teaching had taken place. He was convinced that the abilities and devotion which marked the teachers of a past generation were existent in that of to-day, and that those who succeeded the Irish workers and thinkers of our time would do them the justice of a recognition they could surely claim. It was the fashion with certain pessimists to glorify the past at the expense of the present. It should be considered whether these critics may not have formed a standard for their contemporaries founded on a narrow introspection of their own intellectual position. Apart from a change in quality, it had been stated that a falling off in numbers had taken place in the students of the Dublin schools of medicine, and it had been inferred that this implied a material decadence. Supposing the fact to be true, he denied the inference. When they measured the Irish school they should recollect that three new centres of education had sprung up in Belfast, Cork, and Galway, and that they had naturally subtracted from the congregation of students in Dublin. Or if they gauged their strength by the number of men who obtained qualifications from the Irish universities and colleges, they should not forget that nearly every student educated in certain provincial towns who did not proceed to the degrees of the Royal University goes to England or Scotland for his diploma. If these students elected to obtain Scotch or English qualifications it was surely no argument against Irish schools, where they had obtained the training necessary to fit them for their diplomas. Let them see if this exodus could be fairly taken as an argument against Irish licensing bodies. Why did these students go? Was it because the diplomas were cheaper than those at home? If this was the reason it did not apply to England, and the difference was so small in Scotland that it could only influence a moderate number of students, and was of no general import. This was the more true in that the apparent economy of the Scotch fee was lessened by the amount of the charges for re-examination. Or was it because the examinations were more easy to pass? If this was true, it was to the credit of the Irish corporations that they had not entered into an unworthy downward competition, but had, in the best interests of the public good, maintained a proper standard of professional fitness, and had refused to flood the market with practitioners of inferior merit. They should also look at the impoverished condition of the country and the unsettled state of those classes from which their students had been chiefly drawn, and see the way in which the gates of the approach to their profession were being gradually locked by the General Medical Council. It seemed to be working in nearly every direction except the right one; it was overloading the unhappy student with new subjects and new courses, and now had imposed a sorry burden on him and those who pay for him, in the shape of a fifth and, he believed, wholly unnecessary year of study. If any argument could be brought forward to justify this fifth year it was that so much of many things had been given to the pupil to do that he could not complete them in four years. This was a reason for diminishing the curriculum, not for weighting the student with a further period of study.

I understand Sir George Porter has resigned his seat on the Council of the College. He is senior member of the Council and an ex-President of the College. Mr. Henry Gray Croly, ex-President of the College, will be a candidate for the vacancy.

Consultation Fees in Urgent Cases.

An important decision was given last week by the Lord Chief Baron with reference to fees in consultation cases with Poor-law medical officers. Heretofore dispensary medical officers requiring a consultation had to obtain an order from the relieving officer, who might be at a considerable distance, and thus valuable time would be lost in urgent cases; sometimes a consultation was held without an order from a relieving officer, and as a result some guardians paid but some refused. Mr. Nathaniel Mayne of Longford sued the Longford guardians for £11 11*s.*, which he claimed for medical attendance and fees due in 1891, 1892, and 1893. Judge Curran gave the plaintiff a decree for £8 8*s.*, from which decision both parties appealed. The appeals were heard before Mr. Justice Andrews at Longford last spring. The amount claimed consisted of a sum of £2 2*s.* for consultation with Mr. Atkinson in one case, and a similar amount for a second consultation; and £3 3*s.* for attendance at the workhouse and two consultations with Dr. Maguire. Mr. Justice Andrews stated a case, which was fully argued last week in the Exchequer Division. The Lord Chief Baron, in giving judgment, said that Rule 2 of Article 21 of the Poor-law Medical Arrangements directed dispensary medical officers, among other things, to supply all requisite medical and surgical advice and assistance to any poor person in the district when they are required to do so by ticket. These words he held to include the employment, if necessary, of a second physician or surgeon; and, further, under another of the articles, the dispensary medical officer was entitled in an urgent case to do whatever was necessary on his own responsibility. Therefore, the plaintiff was entitled to recover his consultation fees, and in the cases in which he had acted for the dispensary medical officer at the request of the latter, on the occasions of his illness, he was entitled to recover because the guardians had adopted his services. The necessary result of what he had said was that the medical officer, as agent of the guardians, could decide in a case, if necessary, whether the applicant for relief was a poor person or not, and even though he should make a mistake on that point the guardians would be bound by his act. The court awarded costs of the hearing in the court below and of the appeals to the plaintiff.

General Prisons Board.

From the sixteenth report, ending March 31st last, it appears that the commitments of all classes of local prisoners have still further decreased during 1893-94 by 182 as compared with the previous year, while the cost of the prisons has been reduced by over £3000. The board again express their regret that many of the prisoners committed by the magistrates for very short sentences are old offenders. They have in previous reports pointed out the evil results, expense to the public, and inutility of such sentences. To send prisoners to gaol for twenty-four hours, or perhaps three days, who have been two or three hundred times in prison before is a mere farce. All these prisoners must be washed and cleansed, and probably sent to hospital, owing to the effects of drink, to be there cared for and attended to, and rendered physically fit for re-indulgence in crime after a short rest in gaol. The average daily number of prisoners in the local prisons during the year was 2436; the number of deaths, excluding two executions, was 13, a death-rate of 5·33 per 1000 on the daily average number in custody. The death-rate for the estimated population of the whole of Ireland during the same period was 18·8. Of these 13 deaths, 2 were from pneumonia, 1 from typhoid fever with pneumonia, and 1 from swallowing a quantity of black paint or varnish.

The Belfast Medical School.

The present session commenced on Oct. 30th at Queen's College, where the various professors resumed their lectures on Thursday, Nov. 1st. Dr. T. K. Wheeler delivered an introductory address in the theatre of the Royal Hospital, which was crowded with students. He gave a careful and full explanation of the new arrangements for clinical teaching, which have been perfected, after long deliberation, by the staff. According to this plan a student beginning his hospital work will have it arranged for each year in such a way that he will pass through every department and will spend a part of his time under each of the members of the staff. Dr. Wheeler has earned the grateful thanks of the students and of his colleagues on the medical staff for the extreme pains he has taken in elaborating and perfecting a scheme which will be of the utmost benefit to the Belfast Medical School.

The Ulster Medical Society.

On Nov. 2nd the first meeting of the winter session was held, when the retiring President, having thanked the members for the honour they had done him in electing him, introduced his successor, Mr. F. E. McFarland, who delivered an interesting inaugural address on the Temperance Question from a Medical Standpoint. He was accorded a hearty vote of thanks. The annual dinner is to be held on Nov. 22nd.

The Belfast Royal Hospital.

It has been decided to appoint an additional assistant surgeon, and also to appoint another house surgeon to assist in the out-patient room.

Dr. Thomas William Kyle, who died last week at Measham, Derbyshire, after a long illness, was Examiner in Hygiene to Trinity College, Dublin, and medical officer of health to the Ashby Woulds united district and Ashby-de-la-Zouch rural district.

Nov. 6th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Uræmic Aphasia.

M. DUPRÉ of Bordeaux[1] reports two instances of aphasia occurring during attacks of uræmia. Aphasic attacks due to toxic influences are already known to the profession in connexion with the ingestion of tobacco and santonin. That the same trouble may be induced by the circulation in the blood of uneliminated toxines is proved by the perusal of the two cases cited by M. Dupré. A child aged nine years was admitted into the Trousseau Hospital suffering from anasarca following scarlet fever. Six days later, when the condition due to the nephritis had greatly improved, anuria lasting twenty-four hours supervened, followed immediately by complete motor aphasia, with incomplete agraphia and paresis of the right upper limb without sensorial aphasia. This condition persisted for two days, and disappeared in a few hours after the flow of urine had become restored. Again, an old atheromatous, emphysematous, and bronchiectasic man, with contracted kidneys, was seized with influenza. A well-marked attack of uræmia appeared as a complication, and with it motor aphasia and partial agraphia, without paralysis of the limbs. As in the first-mentioned instance, the aphasia was only of an ephemeral character, ceasing after a duration of thirty-six hours. In these patients, both of whom completely recovered, there remains no trace of the passing aphasia. Only a few examples of this complication of uræmic poisoning have been recorded (three by Raymond, one by Jocks,[2] and one or two in L. Monod's thesis, 1868).

The Clinical Significance of Perigastric Adhesions.

About a year ago Professor Terrier reported the case of a woman affected with intense pain in the epigastrium due to the presence of adhesions binding the stomach to the neighbouring organs. Laparotomy was performed, and the most careful examination failed to bring to light any other cause for the trouble than the existence of these adhesions, the rupture of which brought about a lasting recovery. Since then M. Terrier[3] has had under his care a woman aged fifty years, in whom symptoms referable to the stomach had appeared ten years ago. These symptoms were dyspepsia, vomiting, and great pain. After a respite of two years the same trouble reappeared, accompanied with hæmatemesis. A second respite, lasting three years, was followed by a third attack, and a fourth attack occurring in October, 1893, brought her in an emaciated state under the notice of M. Terrier. The epigastric region was doughy to the touch, and the stomach was dilated. Laparotomy brought to light a slight induration at the cardiac orifice and numerous adhesions between the stomach, the liver, and the omentum. The adhesions were divided and the woman has remained well ever since. M. Championnière had under treatment three years ago a man who had suffered for twelve years from epigastric pains. The most contradictory diagnoses had been advanced to account for his trouble. Stoicesco of Budapest was the only surgeon who had suggested the existence of perigastric adhesions, the idea being based upon the fact that the seizures occurred one hour after meals, and reached a climax two hours later. Laparotomy was had recourse to by M. Championnière, and dense ligneous adhesions were discovered binding together the stomach, liver, and omentum. So hard were they that much difficulty was experienced in sectioning them. The only morbid antecedent that could in this case possibly account for the presence of the bands was an almost forgotten abscess of the liver which had emptied itself into the gut.

A Legacy to the Paris Biological Society.

The Société de Biologie has had bequeathed to it the entire fortune of one of its brightest ornaments—the late regretted Professor Pouchet of the Muséum d'Histoire Naturelle. I transcribe the terms in which the touching bequest is made: "N'ayant pas de famille, je lègue tout ce que je possède à la Société de Biologie, où j'ai toujours trouvé bon accueil et sympathie depuis le jour où j'en ai été membre. Je crois fermement que c'est le meilleur usage social à faire du peu de bien que je laisse, environ 2000 francs de rente" (£80 a year).

Nov. 6th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Scleroderma an easily Curable Disease.

IT is generally assumed that scleroderma, especially when affecting a large part of the skin, is an incurable disease. At a meeting of the Wiener Medicinischer Society, however, Dr. Beer of Vienna reported on four cases of scleroderma treated by him successfully, and one of the patients was presented to the society. This was the case of a patient fifty-nine years of age, who was attacked by scleroderma in the spring of 1892. The etiology of the case was not quite clear. The sclerodermic affection developed very quickly, and in a few weeks it embraced the whole thorax, commencing on the neck, where it was marked by the lines

[1] Congrès Français de Médecine Interne, held at Lyons on Oct. 25th to 29th.

[2] Société Clinique de Paris.

[3] Société de Chirurgie, Oct. 31st.

of pressure produced by the collar, and ending downwards on the os sacrum and over the symphysis in a line caused by the pressure of a truss. It was, in fact, a case of well-developed scleroderma *en cuirasse* in the atrophic stage. The patient had also Dupuytren's contractures of both hands. He was treated by Dr. Beer with massage for a year and the skin became quite normal again. It was now soft, easily detachable from its base, and will form folds. Its physiological functions were also quite normal now, as it sweats, and when exposed to the cold assumed a visible cutis anserina. No baths or ointments were used in this case. In the three other cases, which were complicated with highly developed muscular atrophy, the massage treatment also proved highly successful and the patients were cured. But the treatment required a long time to effect a cure. One of the patients was treated for three hours daily for some months. For combating the muscular atrophy the faradaic current was used with marked success. One of the patients, who weighed only 32 lb. when the treatment was commenced, and whose muscles were so atrophied that he could not move his upper extremities, which were in a flexed position, recovered and weighed 105 lb. after treatment for some months. Dr. Beer believed, therefore, that scleroderma was an easily curable disease, providing the patient and the physician were sufficiently patient. He also pointed out that pressure exerted on an œdematous skin might produce scleroderma. Another fact alluded to was the occurrence of two symptoms of Graves' disease in some of the patients—viz., tachycardia and exophthalmos,—while at the same time the thyroid gland was diminished in size. This fact was also observed later by another Vienna physician, Dr. G. Singer, who found degeneration of the thyroid gland in a patient who had died from scleroderma.

The Treatment of Diphtheria by Antitoxin.

Most physicians and hospitals have had to stop the antitoxin treatment, as they cannot obtain a sufficient quantity of serum from the manufacturers. The serum will be obtainable here from a State establishment, but it will be some months before this matter is settled. The public, on the other hand, have been so excited by the articles that have appeared in the press praising Behring's serum that they sometimes decline a serum derived from any other source—e.g., Paris or Berlin (Aronson's).

Nov. 5th.

Obituary.

OCTAVIUS STURGES, M.D. CANTAB., F.R.C.P. LOND.,

SENIOR CENSOR OF THE ROYAL COLLEGE OF PHYSICIANS OF LONDON.

DR. OCTAVIUS STURGES, who died on Saturday last from the result of injuries inflicted by a hansom cab eight days previously, deserves a more elaborate biography than it is possible to provide at a few days' notice; but the main outlines can be readily sketched. He was born in London in the year 1833. In early life he had a fancy to become a soldier, and a cadetship was procured for him in the East India Company's service. At about this time his views as to the choice of a profession underwent a change, with a leaning to medicine rather than the army. But it then seemed too late to alter his course, and he proceeded to Addiscombe and thence to India as a Lieutenant in the Bombay Artillery. His time in India was peaceful and uninteresting, and after about five years he quitted India and military life, and returned to England with the medical bias still strong within him. His Indian experience bore fruit many years afterwards in a little book in the nature of a novel, entitled "In the Company's Service," which was published anonymously, but which, it may now be revealed, was chiefly his work. Shortly after his return he entered at St. George's Hospital and at Emmanuel College, Cambridge. At St. George's Hospital, in the year 1863, he obtained the office of Medical Registrar, and in this position acquired the taste and the aptitude for clinical observation which were the characteristics of all his subsequent career. In 1868, comparatively early in his medical life, he was appointed assistant physician to the Westminster Hospital with which he remained connected until his death. He became full physician in the year 1875, and ultimately became senior physician. During his connexion with the hospital he successively lectured on forensic medicine, materia medica, and medicine. During much of this time he was working also at the Hospital for Sick Children, Great Ormond-street, to which he became assistant physician in 1873 and full physician in 1884. At his death he was senior physician at Great Ormond-street as well as at Westminster.

He was frequently employed as examiner at the University of Cambridge and elsewhere, probably much to the comfort of those who came under his beneficent scrutiny. He may be thought to have attained the highest point of his official life in the post of Senior Censor to the Royal College of Physicians of London, to which he was elected this year.

The great opportunities which fell to his lot were not wasted. He was a frequent contributor to THE LANCET, and was the author of several books, the best known of which are his "Introduction to the Study of Clinical Medicine" and his works on Pneumonia and Chorea. His latest effort at authorship was in the Lumleian Lectures at the Royal College of Physicians on Diseases of the Heart in Childhood, and the last labour of his life was their preparation for the press.

His works were not only the outcome of large experience and much clinical acumen, but were characterised by a felicity of diction which is not too common in medical literature. His genius was essentially clinical: he was a student of the living rather than of the dead. He had little taste for pathology, excepting as a means of verifying or correcting diagnoses, and was prone to have regard to disease, not only in the light of material results, nor as always to be adequately explained by what was found in the post-mortem room, but as often having in it what is beyond our ken. His book on Chorea, which is admirable as a clinical study, displayed his habit of viewing morbid conditions widely in their bearings, tangible and intangible, by no means limiting his range to what could be revealed by the knife or the microscope. He was somewhat sceptical as to the use of drugs—a form of scepticism which he sometimes exaggerated in his abhorrence of anything that could be interpreted as medical trading or the advertising of cures. He was an excellent diagnostician, especially painstaking and successful in the use of the stethoscope and whatever pertained to the lungs and heart. His work on Pneumonia, in the second edition of which he found an able coadjutor in Dr. Coupland, is a work of great and probably permanent value, and is no less characteristic of the author than that on Chorea. Anything approaching puffery or self-advertisement was impossible to him. Far from ever affecting to know more than he did, he often (and this was the only dishonesty he was capable of) posed as knowing less.

His personal character was such that he never lost a real friend and should never have made a real enemy. He never offended by self-assertion; indeed, had he been more assertive he would probably have had a larger practice—and perhaps fewer friends. He was of sound judgment, and the writer of this notice has been informed by the Registrar of the Royal College of Physicians that there was no one on whose judgment he more relied in College matters than on that of the late Senior Censor. He was kindly, considerate, and benevolent. At his hospitals he was greatly esteemed by his colleagues, not only in consequence of his genial nature, but for his sterling honesty and sound sense, and for a power which he had of speaking plainly and forcibly when occasion called for it; and patients could scarcely fail to appreciate a physician so conscientious, so judicious, and so considerate. Among the qualities which endeared him to his friends were a certain genial humour, a delicate appreciation of the ludicrous, and a gift of witty expression, with none of which was there any admixture of ill-nature. There have been many physicians more sought after by the public, but few who better deserved the esteem of their fellow workers. By those who were privileged to be intimate with him his loss will be long and deeply deplored as one which has left their world the worse.

Dr. Donkin, for years Dr. Sturges' colleague on the staff of the Westminster Hospital, writes to us as follows:—"Will you allow me as an intimate friend and colleague of Dr. Sturges for twenty years to say a few words expressive of the deep regret which must be felt at his death by all who knew him, and of the heavy loss thus occasioned, not only to

the hospital he served so long and so faithfully, but also to the profession at large and his numerous personal friends? Others will doubtless speak, as all who knew him well could do at length, when giving a full account of his life and work, of his admirable clinical insight and wise judgment as a practical physician, as well as of his widely recognised excellence as a scholar and master of literary expression; I would dwell at this moment rather on the personal qualities which gained for him the affection of so many men and the respect of all. Dr. Sturges was always just, yet always kind; a staunch friend, yet never a blind partisan; a loyal colleague, yet ever true to what he thought to be right; a lover of peace, yet good at need in necessary contest. He was absolutely free from pettiness of spirit, unselfish and modest almost to a fault. A man of more impersonal motives I never knew. A rare scientific and moral earnestness marked all his ways, both medical and social; but he was none the less for this most sympathetic of nature, genuinely humorous, and always genial. All these qualities and many others secured for him the best kind of popularity among the resident officers and the students of the hospital. His loss to them is felt to be irreparable, and is, I know, very deeply and widely deplored. Ever since I have known him his appearance among students on all kinds of occasion has been cheered in a manner which unmistakably proved their affection and respect, and many of them could personally testify to his unvarying kindness and ever ready help and sympathy. His memory will long be held in loving regard by the members of the Guthrie Society of Westminster Hospital Medical School, of which he was practically the founder and the first and most welcome President, being three times chosen by the votes of the students. By his death we have suffered a loss at Westminster Hospital which cannot be compensated, and his friends and colleagues in the profession at large must always and deeply lament the loss of a man of his stamp—a stamp which is sufficiently rare to be invaluable."

THOMAS STILES, M.R.C.S. ENG., L.S.A.

ACCORDING to the tables of the Registrar-General the members of our profession are not commonly blessed with length of days, their expectation of life standing comparatively low on the list. A notable exception, however, has for many years been in evidence at Spalding, Lincolnshire, in the case of Mr. Thomas Stiles. We regret to learn that our venerable colleague has now paid the debt of nature, having peacefully and quietly passed away at the unusual age of ninety-six after a few days' suffering from congestion of the lungs. The deceased gentleman was born on Easter Day, 1798. After apprenticeship with a surgeon at Wisbech he removed to London, studied at Guy's and St. Thomas's Hospitals, and was probably the last survivor of those who attended the lectures of Sir Astley Cooper, Cline, Clutterbuck, and Denman. In these early days he made two voyages to Greenland in the capacity of ship's medical officer, witnessing aspects of nature unfamiliar to the ordinary traveller and laying up reminiscences of adventure and hardship. Having qualified as L.S.A. in 1821, he settled down to the practice of his profession in the village of Pinchbeck, near Spalding, in which parish and the neighbourhood he was for more than forty years the best known, most useful, and most highly reputed resident. On retiring from practice some years ago he quitted Pinchbeck and made his home at Spalding, where the closing stage of his long and valuable life was passed in happy and honourable repose. Notwithstanding his great age his mental activity was preserved to the last, and we understand that it is only a short time since he revisited the village of Pinchbeck, where his most active years were spent, and of which place he always retained the most affectionate memories. Everybody knew the nonagenarian medical man; he had a kindly word for all, and no one will entertain other than pleasant and tender thoughts of him who is now no more. Up to the very last he had the clearest possible recollection of notable events occurring during his boyhood—the victories and death of Lord Nelson, for instance. He was always a diligent reader, and wrote an article on Diphtheria in a medical journal in 1858. In public matters and important local affairs he took a most intelligent and lively interest. He possessed great natural gifts of description and delivery, and could charm public audiences with impassioned recitations or with narratives drawn from his vast store of information and miscellaneous knowledge. His recollections extended even to the time when "resurrectionists" were at work in South Lincolnshire. Within a comparatively recent period he contributed to the *Spalding Free Press* a very lucid and interesting sketch on "Longevity in the Fens." The MS. was in his own handwriting, and surely it would have been difficult to select a more appropriate theme. Mr. Stiles enjoyed the unusual distinction of being the senior of three successive generations of contemporary medical men. He leaves one son, Dr. H. T. Stiles of Spalding, and two grandsons—Dr. A. J. Stiles of Spalding, and Dr. Harold J. Stiles, one of the examiners in the Royal College of Surgeons, Edinburgh, and assistant to Mr. Chiene, Professor of Surgery in Edinburgh University. Mr. Stiles's funeral took place on Oct. 31st at Pinchbeck.

ROBERT McNICOLL, M.R.C.S. ENG., L.S.A., J.P.

BY the death of Mr. McNicoll on Oct. 30th St. Helens has to mourn the loss of a long-established resident, a prominent public servant, and one of the best known and most respected men in South Lancashire. Born at Newcastle in 1820, Mr. McNicoll commenced medical study in Dublin in 1845, and afterwards attended the Royal Infirmary, Liverpool, and St. Thomas's Hospital, London. In 1848 he qualified as M.R.C.S., and began practice in St. Helens, where he soon showed himself a moving spirit in all matters affecting the public welfare. In 1858 he was elected a member of the Board of Commissioners for Eccleston, and in 1868 he became a member of the council for Eccleston Ward and one of the first aldermen. Four years later he resigned and was appointed medical officer of health for the borough, a position which he held for twenty-one years, retiring last June on a pension of two-thirds of his salary. He was also a borough magistrate and president of the Medico-Ethical Society. On Oct. 2nd, after attending a civic function, he was seized with illness due to congestion of the kidneys, which ultimately proved fatal.

CHARLES CYRIL HICKS, M.D. ST. AND., M.R.C.S. ENG., L.S.A. LOND., J.P.

THE death of Dr. Hicks of Wokingham, Berkshire, which took place at Bath, after much suffering, on Oct. 13th last, was by no means unexpected. He was born in 1832 at Toddington, Bedfordshire, the fourth in succession of a line of medical men. After a successful career as a student at Guy's Hospital he qualified as M.R.C.S. in 1857, and practised at Dunstable, in his native county, from that year to 1879, becoming medical officer of health for the town. He took the M.D. degree at St. Andrews University in 1862. From 1879 to 1882 he practised in South Kensington, and in 1882 he succeeded Dr. Noad at Wokingham. He retired from practice last December in consequence of general failure of health following upon an attack of influenza. He had looked forward to a period of leisure for reading, but unhappily the sight of one eye was lost twelve days after his retirement, and the other eye became too weak for use. His declining health had been watched with much sympathy and sorrow for two years past by his many patients and friends at Wokingham. He will be remembered by all who knew him, especially by his poorer patients, for his uniform gentleness and attention. He was Surgeon-Major of the 1st Bedfordshire Rifle Volunteers, and was on the Commission of the Peace for Dunstable.

DEATHS OF FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Carlo Pedrazzi, late Assistant in the Institute of Clinical Medicine, Genoa, and author of various papers on clinical subjects, among which may be mentioned one on the Action of Salicylate of Soda and the Salts of Quinine on Peripheral Circulation.—Dr. Eon, Chief of the Military Hospital of Gafsa Gingibre.

FOOTBALL CASUALTIES.—During a match on Saturday last at Catford, between Catford Bridge Third Team and Anchor A Team, a Catford half-back fractured his leg just above the ankle, and was conveyed to Guy's Hospital.—While playing a match at Batley against the St. Mary's Club of that town a player, a full-back, sustained injuries to his leg and was removed to the Dewsbury and District Infirmary.

Medical News.

ROYAL COLLEGES OF PHYSICIANS AND OF SURGEONS IN IRELAND: CONJOINT SCHEME.—The following have passed the Final Examinations:—

Honours.—T. P. Conlon, George S. Davidge, J. Dwyer, and E. F. Power.

Completing Examination.—C. A. Black, E. A. Bourke, J. F. Bulfin, E. A. Chartres, R. Coffey, B. J. Coyle, G. E. Creighton, K. Delany, T. Hennessy, A. M. Halligan, H. Hunt, A. J. Kearney, H. S. Laird, R. J. Maguire, E. A. Malcomson, G. Martin, J. C. Martin, J. A. Neary, D. J. O'Brien, C. J. O'Gorman, E. A. Travers-Stubbs, J. A. Young.

Medicine.—Thomas Cairns, J. P. Cassidy, J. D. L. Davys, M. Delany, T. J. Jordan, W. F. McCann, J. F. McMonagh, E. J. Tynan, J. H. Walsh.

Surgery and Ophthalmology.—J. A. Beaumont, T. Cairns, J. G. Crozier, J. W. Davys, M. Delany, J. J. Dolan, J. Jordan, W. F. McCann, E. J. Tynan.

Midwifery.—J. P. Cassidy, J. H. L. Davys, J. W. Griffin, R. D. Jephson, T. J. Jordan.

Forensic Medicine.—T. Cairns, H. G. F. Dawson, E. J. Tynan.

FOREIGN UNIVERSITY INTELLIGENCE.—*Bordeaux:* The sum of 100,000 francs has been given by M. Dupouy, Senator of La Gironde—in memory of his father, who practised for fifty years in Bordeaux as a medical man—to establish a Professorship of Gynæcology. *Warsaw:* Dr. H. F. Hoyer, Professor of Histology and Comparative Anatomy, is about to retire after thirty-five years' service.

A NEW medical journal, entitled *Boletin de Higiene*, has just been commenced in Toluca, Mexico, as the organ of the Superior Council of Health. The editor-in-chief is Dr. Ricardo Marin.

THE eighth annual meeting of the Devon and Cornwall Ear and Throat Hospital has just been held at Plymouth. The patients have increased from 557 in 1893 to 649 during the past year, and their contributions amount to a comparatively large sum. A legacy of £50 had been received, but additional subscriptions are required.

MANCHESTER EAR INSTITUTION.—The thirty-ninth annual report, presented at the meeting of this institution held last week, showed that the total number of in-patients admitted during the year was 1670, as compared with 1581 in the previous year. A large number of operations, many of them of a serious character, had been performed with gratifying success. The receipts had been £494. From the Hospital Saturday Fund £68 had been received, as compared with £38 last year. The Chairman mentioned that they had abolished the system of "recommends," and made a charge of fourpence for each medical visit, £134 being contributed from that source. After a vote of thanks to the officers Sir William Houldsworth, M.P., was elected President, and Mr. Armitage Vice-President.

THE financial difficulties of the Kidderminster Infirmary and Children's Hospital formed the subject of anxious consideration at a meeting held in the town hall last week. The Mayor, who presided, said that last year there were 2254 out-patients and 618 in-patients, and stated that one cause of the heavy debt on the institution was the fact that the patients were now supplied with various things which formerly they had to provide for themselves. It was necessary to clear off the present debt of £1000 and to devise a scheme for ensuring an income, or some of the wards would have to be closed. If the work-people of Kidderminster, who might be estimated at 5000, would subscribe only one halfpenny per week there would be no further anxiety.

ADMINISTERING ANÆSTHETICS FOR UNREGISTERED DENTISTS.—At a meeting recently held of the Society of York Dentists the following resolution was unanimously carried and sent to the York Medical Society:—"This society wishes to make known to the members of the medical profession that the Dentists Act require all persons practising dentistry to be registered, and respectfully urges the members of the York Medical Society to express their disapproval of medical practitioners administering anæsthetics for unregistered dental practitioners in York, such practice being considered unprofessional and calculated to encourage and support quackery and fraud." The following resolution, passed unanimously by the York Medical Society, was received in reply:—"That this meeting of the society considers it unprofessional for registered medical practitioners to administer anæsthetics for unregistered dentists."

NATIONAL SOCIETY FOR EMPLOYMENT OF EPILEPTICS.—The foundation stone of the first permanent Home on the Farm Colony for Epileptics at Chalfont St. Peters, in Buckinghamshire, will be laid on Wednesday, the 14th inst., by Mr. Passmore Edwards.

THE SURGICAL AID SOCIETY (TUNBRIDGE WELLS BRANCH).—The annual meeting of this branch of the society was held on the 30th ult., when its usefulness was the plea upon which an appeal for further funds was founded. During the past year the total receipts of the branch amounted to £114, of which £89 were sent to the parent society. Over 400 subscribers' letters were issued.

"FRIEDENHEIM."—The anniversary meeting of the supporters of the Home of Peace for the Dying, or "Friedenheim," was held in the Portman Rooms, Regent-street, on Wednesday afternoon, under the presidency of Prebendary Webb-Peploe. The President of the Royal College of Physicians, London, who was present, moved a resolution, which met with unanimous approval, that the Home was worthy of all support, and promised to make its purposes and utility known.

THE quarterly court of governors of the Devon and Exeter Hospital met last week, the high sheriff of Devon presiding. The average daily number of in-patients during the quarter had been 128, as against 142 last year. The Mayor of Exeter submitted a resolution recommending extensive alterations in the hospital, and the building of a new wing, which would necessitate an estimated expenditure of £11,800. It was stated that the hospital was built 150 years ago and that the drainage required improvement. The resolution was carried, and a munificent donation of £3000 by Mr. John Dawson was announced.

ROYAL INSTITUTION OF GREAT BRITAIN.—At the general monthly meeting, held on Monday last, Nov. 5th, Sir James Crichton-Browne (treasurer and vice-president) being in the chair, the special thanks of the members were returned for the following donations to the fund for the promotion of experimental research at low temperatures: Mr. W. Morris Beaufort, £10; Mrs. Bloomfield Moore, £200; Professor Dewar, £100; Sir Frederick Abel, Bart., £50; Mr. Edward Frankland, £21; the Right Hon. Sir John Lubbock, Bart., £20; Mr. John T. Brunner, M.P., £50; the late Mr. Thomas Hawksley (per Professor Dewar), £100; Mr. Charles Hawksley, £50; the Baroness Burdett-Coutts, £100; Sir Andrew Noble, K.C.B., £100.

MIDLAND MEDICAL SOCIETY. — The annual inaugural meeting and conversazione of the Midland Medical Society was held on Nov. 1st at the Grand Hotel, Colmore-row, Birmingham, under the presidency of Mr. T. F. Chavasse. The meeting proved to be one of the most successful that has been held, and was attended by a large number of the leading medical men of the city and the midland counties. A reception was held by the President in the large saloon from 7 till 8 P.M. Dr. C. Theodore Williams delivered the inaugural address on "The Modern Treatment of Pulmonary Phthisis," which was printed in full in THE LANCET of the 3rd inst. The address was illustrated by limelight diagrams, and was received by a large audience with great interest and attention. At the close a hearty vote of thanks to Dr. Williams was proposed by Dr. W. F. Wade and seconded by Dr. A. H. Carter. During the evening there were on view many scientific, medical, and surgical objects of interest.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.—The president of the Association, Mr. Conolly Norman, F.R.C.P. Irel., has suggested the following as subjects for the Prize Essays open to all assistant medical officers of asylums: (1) the Relations of Chronic Kidney Disease to Insanity; (2) Acute Paranoia, its clinical features and its position with regard to other forms of Insanity; and (3) Heredity and Degeneration. Candidates are at liberty, however, to present an essay on any other subject if they prefer to do so. All further particulars can be obtained from the registrar, Mr. J. Beveridge Spence. After the general meeting of the Association, which will take place, as we have already announced, on Thursday next, Nov. 15th, at the rooms of the Association (11, Chandos-street, Cavendish-square), the members will dine together at the Café Royal, Regent-street. The hour fixed is 6.30 P.M., and all communications on the subject should be made to the honorary secretary, Dr. Fletcher Beach, at 11, Chandos-street, W.

BOOKS ETC. RECEIVED.

BAILLIÈRE, TINDALL, & COX, King William-street, Strand, London.
The Urine in Health and Disease and Urinary Analysis. By Dr. C. Black, M.D., L.R.C.S. Edin., F.F.P. & S. Glasg. 1895. pp. 246. price 7s. 6d.

CHURCHILL, J. & A., New Burlington-street, London.
A Treatise on Hygiene and Public Health. Edited by T. Stevenson, M.D., F.R.C.P. Lond., and S. F. Murphy, M.R.C.S. In three volumes. Vol. III., Sanitary Law. 1894. pp. 459. price 20s.
Transactions of the Ophthalmological Society. Vol. XIV. Session. 1893-94. price 12s. 6d.

DOUGLAS, DAVID, Edinburgh.
Professor Koch on the Bacteriological Diagnosis of Cholera, Water Filtration, and Cholera, and the Cholera in Germany during the Winter of 1892-93. Translated by Geo. Duncan, M.A. 1894. pp. 158.

GRIFFIN, CHAS. & COMPANY, Exeter-street, Strand, London.
Fibroid Diseases of the Lung, including Fibroid Phthisis. By Sir A. Clark, Bart., W. J. Hadley, M.D. Durh., M.R.C.P., and A. Chaplin, M.D. Cantab., M.R.C.P. Illustrated. 1894. pp. 199. price 21s. net.

LEHMANN, J. F., München.
Atlas und Grundriss der Traumatischen Fracturen und Luxationen. Von Professor Dr. H. Helferich. Illustrated. 1895. pp. 126.

LEWIS, H. K., Gower-street, London.
The Theory and Practice of Medicine. By Fred. T. Roberts, M.D., B.Sc., F.R.C.P. Ninth Edition. 1894. pp. 1168. Price 21s.

MACMILLAN & Co., London.
Physiology for Beginners. By M. Foster, M.D., F.R.S., and L. E. Shore, M.A., M.D. 1894. pp. 239. Price 2s. 6d.

NUTT, DAVID, Strand, London.
Lectures on the Darwinian Theory delivered by the late A. M. Marshall, M.A., M.D., D.Sc., F.R.S. Edited by C. F. Marshall, M.D. Illustrated. 1894. pp. 236. Price 7s. 6d.

REHMAN F. J., London, THE F. A. DAVIS COMPANY, Philadelphia.
Annual of the Universal Medical Sciences. Edited by Chas. E. Sajous, M.D., and others. Illustrated. Vols. I. to V. 1894.

RICHARDSON, H., Church-street, Greenwich.
Records of the Miller Hospital and Royal Kent Dispensary. By J. Poland, F.R.C.S. Illustrated. 1893. pp. 321. Prices, 8vo 7s. 6d., 4to 12s. 6d.

SAUNDERS, W. B., Walnut-street, Philadelphia.
Saunders, New Aid Series: a Manual of Modern Surgery, General and Operative. By J. C. Da Costa, M.D. Illustrated. 1894. pp. 809.

SKEFFINGTON & SON, Piccadilly, London.
Beryl: the Story of a Child. By Georgina M. Synge. Illustrated. 1894. pp. 126.

SMITH, ELDER & Co., Waterloo-place, London.
Therapeutics: its Principles and Practice. By H. C. Wood, M.D., LL.D. Ninth Edition. 1894. pp. 997. Price 18s.

TREAT, E. B., Cooper Union, New York.
A System of Legal Medicine. By A. McLane Hamilton, M.D., and L. Bodkin, Barrister, and others. Illustrated. Vol. I. 1894. pp. 657.

In the Veldt; by Harley (Longmans, Green, & Co., London, 1894); price 1s. 6d.—Die Behandlung der Pleura-empyeme bei an Lungentuberkulose Leidenden; von Professor Dr. Ch. Bäumler (Geo. Thieme, Leipzig, 1894).—On Gangrene of the Limbs following Typhoid Fever; by F. D. Drewitt, M.A., M.D., F.R.C.P. (H. K. Lewis, London, 1894).—Endemic Cancer; by T. L. Webb, L.R.C.P. Lond.; reprint from the Birmingham Medical Review, October, 1894.—Cholera and Preventive Inoculation in Gaya Gaol; by Surgeon-Major R. Macrae, M.B., I.M.S.; reprint from the Indian Medical Gazette, September, 1894.—The Noxious Trades and Cattle Slaughtering Act of 1894: with Regulations made by the Governor and Executive Council thereunder: also Cattle Slaughtering Acts of 1834, 1843, and 1851, showing Repealed Portions (C. Potter, Government Printer, Sydney, 1894); price 1s.—Dysphemia, and Remarks upon the Nature of Neuroses, by C. F. Coxwell, M.A., M.D. Cantab., M.R.C.P. Lond.; reprint (Stillwell & Co., Melbourne, Australia).—Climatology of South-west Texas; by S. F. Weatherhead, M.R.C.S. Eng., L.F.P.S. Glasg. (Eureka Printing Company, San Antonio, Texas).—Zur Kenntniss der sogenannten Bothrio-cephalus-Anämie; von Ossian Schauman; mit zwei Tafeln in Farbendruck (Weilin & Goos, Helsingfors, 1894).—The Plague; by Montagu Lubbock, M.D., F.R.C.P.; reprint (Young J. Pentland, Edinburgh, 1893).—Catechism Series: Physiology; Parts VII. and VIII. (E. & S. Livingstone, Edinburgh); price each 1s. net.—Handbuch der Physiologischen Optik; von H. von Helmholtz; achte Lieferung (L. Voss, Hamburg und Leipzig, 1894).—The Verulam Review; October—December, 1894 (E. Stock, London); price 1s.—Hygiene in the School-room; by Edwd. Magennis, M.D. (J. Wright & Co., Bristol, 1894).—Bulletin of the Psychological Section of the Medico-legal Society, September, 1894; by Clark Bell, Esq. (published at 57, Broadway, New York City).—Archivio di Ortopedia; dal Dott. Pietro Panzeri, coll' aiuto di molti studiosi della specialità; anno xi., fasc. 4-5; 1894 (Pietro Agnelli, Milano, 1894).—The Quarterly Journal of Microscopical Science, April, 1894 (J. & A. Churchill, London); price 10s.—Traitement des Vomissements Rebelles dans la Dilatation de l'Estomac; par Dr. M. Kembadgian (Michels et Fils, Paris, 1894).—The Preston Plan for the fair treatment of Voluntary Schools, reprint; by Father Dubberley, Liverpool, 1894.—Transactions of the American Osteological Society, twenty-seventh annual meeting, May 29th, 1894, vol. 6, part I. (Mercury Publishing Company, New Bedford, Mass, 1894).—La Chirurgie Contemporaine des Organes Génito-Urinaires; Septembre, 1894; par Dr. J. M. Lavaux-Paris.—Sonderabdruck aus den Therapeutischen Monatsheften; von Dr. Oscar Liebreich (Julius Springer, Berlin, 1894).—Teratologia: Quarterly Contributions to Antenatal Pathology, with Reviews of the Current Literature of the Subject; edited by J. W. Ballantyne, M.D., F.R.C.P., F.R.S.E.; October—December, 1894; Vol. I. (Williams & Norgate, London).—The Natural History of Plants. Part VII. (Blackie & Son, London); price 2s. 6d. net.—The Maybrick Case: a reprint from the Modern Review of February and March, 1893, of two articles by A. W. MacDougall, Barrister-at-law (Phelp Brothers, Broadway, Walhamgreen).—Przeglad Chirurgiczny; tom xi.; zeszyt 1 (K. Kowalewskiego, Warszawa); 1894.—Aus der Nervenabtheilung des Warschauer Israeliten-Hospitales; Beitrag zur hysterischen Apoplexie; von Dr. med. H. Higier, Assistenzarzt (W. Braumüller, Wien, 1894).—Ueber primäre und secundäre Amyotrophieen organischer und dynamischer Natur; von Dr. med. H. Higier (G. Thieme, Leipzig, 1893).—Wiener Klinik; Vortrüge aus der gesammten praktischen Heilkunde; von Dr. Anton Bum. Ueber unilaterale Hallucinationen; von Dr. H. Higier (Urban & Schwarzenberg, Wien, 1894).—Science Progress; November, 1894 (The Scientific Press, Strand, London, W.C.).—Magazines: November, The Phrenological, The Humanitarian, The Senate, Sunday at Home, Leisure Hour, Boy's Own Paper, Boy's Out-door Games and Recreations, Girl's Own Paper, Girl's Own Out-door Book (Religious Tract Society).

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

BELSON, G. A. W., M.A. Oxon., L.R.C.P. Lond., M.R.C.S. Eng., has been appointed Medical Officer of Health for the Urban Sanitary District of Bampton.

BRODRICK, CHAS. C., L.R.C.P., L.M., L.R.C.S. Edin., has been re-appointed Medical Officer of Health to the Tavistock Sanitary Authority.

BURGESS, D., M.B. Camb., M.R.C.P. Lond, has been reappointed Honorary Physician to the Sheffield Public Hospital.

CHAPMAN, JOHN T., L.R.C.P., L.M., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Shire of Avon, Victoria, Australia, vice Matthews, resigned.

CLARK, F. W., M.B. Durh., L.R.C.P. Lond., M.R.C.S., D.P.H. Camb., has been reappointed Medical Officer of Health for the Borough and Port of Lowestoft.

CRESSY, G. J., L.R.C.P., L.M., L.R.C.S. Irel., has been reappointed Medical Officer of Health, Warsop.

DEIGHTON, F., M.B. Camb., M.R.C.S., has been appointed Surgeon to the Addenbrooke's Hospital, Cambridge.

HAINSWORTH, J. W., M.B. Vict., has been appointed Resident Obstetric Officer to the General Infirmary, Leeds.

HICKS, JNO. ABERNETHY, JUN., M.R.C.S. Eng., L.R.C.P. Lond., L.S.A., M.P.C., has been appointed Honorary Physician to the Nazareth House Convalescent Hospital, Bexhill-on-Sea, Sussex.

HOFFMEISTER, WILLM., M.D. Heidelb., L.R.C.P. Lond., M.R.C.S., has been reappointed Medical Officer of Health to the Cowes Port Sanitary Authority.

HUTTON, E. R., L.R.C.P. Lond., M.R.C.S., has been appointed a District Medical Officer for Tottenham.

JACOB, E. L., B.A. Lond., M.R.C.S., has been reappointed Medical Officer of Health, Dorking.

LANGLANDS, F. H., M.B., Ch.B. Melb., F.R.C.S. Eng., has been appointed Surgeon to Out-patients at the Melbourne Hospital, Victoria, Australia, vice Shields, resigned.

LUKE, THOMAS D., M.B., B.Ch. Irel., has been appointed Junior House Physician to Smedley's Hydropathic Establishment, Matlock.

MATHIESON, A. L., M.B., C.M. Glasg., has been appointed Medical Officer for the Grimesthorpe Sanitary District of the Sheffield Union.

MCCLELLAND, W., M.B., Ch.B. Victoria, has been appointed Non-resident Medical Officer to the Gynæcological Department of the Royal Infirmary, Liverpool.

MIRZA, AHMED, M.B., C.M. Edin., has been appointed Medical Officer of Health for the City of Hyderabad, Deccan, India.

MOORE, E. J., L.R.C.P., L.R.C.S. Irel., has been appointed House Physician, St. Vincent's Hospital, Dublin.

PIM, JOS. H., L.R.C.P., L.R.C.S. Irel., L.M., has been appointed Medical Officer for the Blankney Sanitary District of the Sleaford Union.

PLAISTER, W. H., M.R.C.S., has been appointed a District Medical Officer for Tottenham.

RICHMOND, J. R., has been appointed Medical Officer for the Overton and Penley District of the Ellesmere Union.

ROBINSON, A. S., M.A. Cantab., L.S.A. Lond., has been appointed House Surgeon to the General Infirmary, Leeds.

SMITH, M. J., M.B. Dubl., has been appointed House Surgeon, St. Vincent's Hospital, Dublin.

SMITH, PETER C., M.D., M.S. Glasg., D.P.H. Camb., has been appointed Medical Officer of Health for the parish of Wandsworth.

STONEY, W. W., M.B. Vict., has been appointed Resident Medical Officer to the Ida Hospital, Leeds.

TRUMPER, O. B., M.B. Vict., has been appointed House Surgeon to the General Infirmary, Leeds.

TWEEDIE, F. K., M.B., B.Ch., B.A.O. Irel., has been reappointed Medical Officer of Health for Hucknall Huthwaite.

WALKER, F., M.R.C.S., L.R.C.P., has been appointed House Physician to the General Infirmary, Leeds.

WASHBOURN, WILLIAM, M.R.C.S., L.R.C.P., has been appointed Assistant Surgeon to the General Infirmary, Gloucester, and the Gloucestershire Eye Institution, vice J. J. S. Johnstone, M.A., M.D., resigned.

WESTLAKE, ALGERNON, M.B., C.M. Edin., has been appointed Medical Officer to the Workhouse, Grimsby Union.

WINDLE, J. D., L.R.C.P., L.M. Irel., L.R.C.S. Edin., M.R.C.S. Eng., has been reappointed Medical Officer of Health for the Southall and Norwood Urban Sanitary Districts.

YOUNG, J., M.D. Glasg., C.M., has been reappointed Medical Officer of Health to the St. George's Urban Sanitary Authority.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BRITISH INSTITUTE OF PREVENTIVE MEDICINE.—Assistant Bacteriologist. Applications to Dr. Macfadyen, 101, Great Russell-street, London, W.C.

CHARING-CROSS HOSPITAL, London, W.C.—Physician or Surgeon for Diseases of the Skin.

GENERAL HOSPITAL, NOTTINGHAM.—Assistant House Physician, for six months. Board, lodging, and washing provided in the hospital.

GENERAL HOSPITAL, NOTTINGHAM.—Assistant House Surgeon, for six months. Board, lodging, and washing provided in the hospital.

GRIMSBY AND DISTRICT HOSPITAL.—Resident House Surgeon. Salary £80 per annum, with board, lodging, and washing.

KENT AND CANTERBURY HOSPITAL.—House Surgeon, unmarried. Salary £90 the first year, with board, &c., rising to £100 the second year.

LIVERPOOL NORTHERN HOSPITAL.—Assistant House Surgeon. Salary £70 per annum, with residence and maintenance in the house.

NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill, Stoke-upon-Trent.—House Surgeon. Salary £120 per annum, increasing by £10 a year at the discretion of the committee, with furnished apartments, board, and washing.

PARISH OF CAMBERWELL.—Medical Officer for six months for the Infirmary and Workhouse, at Havil-street, Camberwell. Salary after the rate of £300 per annum. Applications to the Clerk to the Guardians, Guardians' Offices, 29, Peckham-road, S.E.

ST. GEORGE'S HOSPITAL, London, S.W.—Assistant Ophthalmic Surgeon.

THE GENERAL HOSPITAL, Birmingham.—Assistant House Surgeon for six months. Residence, board, and washing provided.

THE HOSPITAL FOR SICK CHILDREN, Great Ormond-street, Bloomsbury, W.C.—House Surgeon, for six months. Salary £20, with board and residence in the Hospital.

THE HOSPITAL FOR SICK CHILDREN, Great Ormond-street, Bloomsbury, W.C.—House Physician, for six months. Salary £20, with board and residence in the hospital.

THE HOSPITAL FOR WOMEN, Soho-square, London.—Registrar for twelve months. Honorarium 25 guineas.

THE ROYAL HOSPITAL FOR CHILDREN AND WOMEN, Waterloo-bridge-road, London, S.E.—Registrar and Anæsthetist, for one year. Honorarium on expiration of term £30.

YORK COUNTY HOSPITAL.—Secretary and Manager. Salary £150 per annum.

Births, Marriages, and Deaths.

BIRTH.

ANDREWS.—On Nov. 2nd, at Swainsthorpe, Lower King's-road, Kingston-on-Thames, the wife of Charles H. Andrews, L.R.C.P. L.R.C.S.E., &c., of a son.

MARRIAGES.

MOWAT—JACKSON.—At the Clarendon Hotel, Princes-street, Edinburgh, on Oct. 31st, by the Rev. William Mowat, M.A., Galashiels, brother of the bridegroom, assisted by the Rev. Thos. Kennedy, D.D., Edinburgh, ex-Moderator of the United Presbyterian Synod, Daniel Mowat, M.D., London, to Miriam, youngest daughter of the late Edward Jackson, of Cheshunt.

PARRY—COLE.—On Nov. 5th, at St. Stephen's Church, Ealing, by the Rev. B. Seymour Tupholme, D.D., Thomas Wilson Parry, M.A., M.B. Cantab., of Youlgreave, Derbyshire, second son of the late Joseph Chatwin Parry of Delhi, to Sophie Minnie Amelia, eldest daughter of Robert Capon Cole of Ealing.

TAYLOR—BUDGE.—At Seafield, Mid Yell, Shetland, on Oct. 30th, by the Rev. J. H. Allen, F.C., North Yell, Henry Pearson Taylor, M.B., C.M., to Sinclair, youngest daughter of the late John Budge, Esq., of Seafield.

WOOD—LYON-CAMPBELL.—On Oct. 31st, at St. Matthew's, Thorpe Hamlet, Norwich, Hubert Moody Wood, Esq., L.R.C.P., M.R.C.S., third son of Louis H. Wood, Esq., of Dulwich, to Louisa (Lola), elder daughter of Colonel C. A. Lyon-Campbell, (late) Royal Engineers.

DEATHS.

COLLYNS.—On Oct. 27th, at Macclesfield, Cheshire, William Collyns, M.R.C.S., L.S.A., in his 73rd year.

JOHNSON.—At 12, Castle-hill, Lancaster, on Nov. 6th, Christopher Johnson, J.P., F.R.C.S., aged 78.

KIRKMAN.—On Nov. 3rd, at Hastings, William Phillips Kirkman, M.D., aged 67.

KYLE.—On Friday, Nov. 2nd, at his residence, Measham, Derbyshire, Thomas William Kyle, M.D., L.M., M.Ch., D.P.H., R.C.S.I., aged 40 years.

MAGILL.—On Nov. 1st, at his residence, Westbourne-park-road, London, W., Martin Magill, M.D., Fleet Surgeon, R.N.

MCCLEMENT.—On Oct. 30th, at Aberdeen, Fleet-surgeon Frederick McClement, M.D., R.N., H.M.S. Clyde, aged 49 years.

MCNICOLL.—On Oct. 30th, at Hardshaw-street, St. Helens, aged 74 years, Robert McNicoll, M.R.C.S., J.P.

STURGES.—On Nov. 3rd, at Wimpole-street, W. Octavius Sturges, M.D., Senior Censor of the Royal College of Physicians, Senior Physician to the Westminster Hospital and to the Hospital for Sick Children, aged 61.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY.—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (1 P.M.), St. Mark's (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynecological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.).

TUESDAY.—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1.30 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.).

WEDNESDAY.—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), Gt. Northern Central (2.30 P.M.), King's College (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.).

THURSDAY.—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (2 P.M.), Soho-square (2 P.M.), North West London (2 P.M.).

FRIDAY.—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), Cancer (2 P.M.), Chelsea (2 P.M.).

SATURDAY.—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), Cancer (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY.—MEDICAL SOCIETY OF LONDON.—8.30 P.M. Clinical Evening. Mr. Harrison Cripps: Successful case of Anastomosis of the Small Intestine.—Mr. Goodsall: Case of Opening the Cæcum for Intestinal Obstruction caused by Cancer.—Dr. F. de Havilland Hall: Case of Late Inherited Syphilis.—Mr. H. H. Clutton: Case of Dislocation of Head of Humerus, with Fracture at the Surgical Neck; Operation. Mr. Astley Bloxam: (1) Portions of Calculus removed by Lumbar Incision; (2) Aneurysm of Popliteal.—Mr. Spencer Watson: Case of Enlarged Turbinals associated with Nasal Polypi.—Mr. E. Hurry Fenwick: An Unusual case of Villus of the Bladder.—Dr. A. E. Garrod: A Cretin under Thyroid Treatment.—Dr. Morgan Dockrell: (1) Adenoma Sebaceum; (2) Mycosis Fungoides improving from the use of Resorcin.—Dr. H. Snow: Removal of Large Facial Epithelioma.

TUESDAY.—ROYAL MEDICAL AND CHIRURGICAL SOCIETY (20, Hanover-square, W.).—Dr. J. J. Pringle: A case of Actinomycosis extensively involving the Skin.—Dr. J. Edward Squire: The Influence of Heredity in Phthisis.

WEDNESDAY.—LARYNGOLOGICAL SOCIETY OF LONDON (20, Hanover-square, W.).—5 P.M. Cases, Specimens, &c., will be exhibited by Mr. Anthony A. Bowlby, Dr. A. Bronner, Dr. James Donelan, Dr. Dundas Grant, Dr. P. de Santi, Mr. Walter G. Spencer, Dr. Scanes-Spicer, Mr. W. R. H. Stewart, Dr. E. B. Waggett, Mr. Walsham, and Dr. W. McNeill Whistler.

HUNTERIAN SOCIETY.—8.30 P.M. Clinical Evening. The President: (1) Fracture of Patella Nine Months after Suture; (2) Gastro-enterostomy Five Months after Operation.—Mr. Campbell M'Donnell: Locomotor Ataxy without Ataxic Symptoms.—Dr. Fred. J. Smith: Syphilitic Disease of Spinal Cord.—Dr. Arthur Davies: Raynaud's Disease (?).—Mr. Hope Grant: Giant Toes. And other cases.

THURSDAY.—HARVEIAN SOCIETY.—8.30 P.M. Mr. A. Pearce Gould: Some cases of Suture of the Urethra after Rupture and External Urethrotomy.

SOCIETY OF ANÆSTHETISTS (20, Hanover-sq., W.).—8.30 P.M. Opening Address by the President (Mr. F. Woodhouse Braine).

FRIDAY.—WEST LONDON MEDICO-CHIRURGICAL SOCIETY (West London Hospital).—8.15 P.M. Adjourned Discussion on Diphtheria.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY.—LONDON POST-GRADUATE COURSE.—Royal London Ophthalmic Hospital, Moorfields, 1 P.M., Mr. A. S. Morton: Ocular Injuries.—London Throat Hospital, Gt. Portland-st., W., 8 P.M., Dr. Whistler: Tuberculosis of Pharynx and Larynx.—Bacteriological Laboratory, King's College, 3 to 5 P.M., Prof. Crookshank and Dr. Hewlett: Typhoid Fever and Diphtheria.

TUESDAY.—LONDON POST-GRADUATE COURSE.—Bethlem Hospital, 2 P.M., Dr. Hyslop: Impulsive, Homicidal, and Moral Insanity.

WEDNESDAY.—LONDON POST-GRADUATE COURSE.—Hospital for Consumption, Brompton, 4 P.M., Dr. T. D. Acland: Cases in Wards.—Royal London Ophthalmic Hospital, Moorfields, 8 P.M., Mr. A. Q. Silcock: Glaucoma.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Bloomsbury).—3 P.M. Lecture by Dr. Beevor.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN (Leicester-square, W.C.).—Dr. M. Dockrell: Dermatitis Exfoliative and Herpetiformis.

WEST LONDON HOSPITAL (Hammersmith-road, W.).—5 P.M. Dr. Ball: Throat and Nose Cases. (Post-graduate Lecture.)

THURSDAY.—LONDON POST-GRADUATE COURSE.—Hospital for Sick Children, Gt. Ormond-st., 3.30 P.M., Mr. C. A. Ballance: Clinical Surgical Lecture.—National Hospital for the Paralysed, Bloomsbury, 2 P.M., Dr. Taylor: Hemiplegia.—Central London Sick Asylum, Cleveland-st., W., 5.30 P.M., Mr. A. P. Gould: The Arrest of Hæmorrhage.

FRIDAY.—LONDON POST-GRADUATE COURSE.—Hospital for Consumption, Brompton, 4 P.M., Dr. Percy Kidd: Laryngeal Tuberculosis.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN (Leicester-square, W.C.).—11 A.M. Dr. J. O. W. Barratt: Pathology of the Skin.

SATURDAY.—LONDON POST-GRADUATE COURSE.—Bethlem Hospital, 11 A.M., Dr. Craig: General Paralysis.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN (Leicester-square, W.C.).—Dr. Morgan Dockrell: Keratosis.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Nov. 8th, 1894.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Dry Bulb	Wet Bulb	Solar Radiation in Vacuo.	Maximum Temp Shade	Min. Temp	Rainfall.	Remarks at 8.30 A.M.
Nov. 2	29·81	S.W.	58	57	69	61	56	0·09	Overcast
,, 3	29·77	S.W.	58	56	90	63	56	...	Cloudy
,, 4	29·84	S.W.	57	56	88	63	52	0·15	Bright
,, 5	29·91	S.W.	56	55	70	60	52	...	Raining
,, 6	30·17	W.	44	44	73	56	44	0·02	Hazy
,, 7	29·90	S.W.	55	53	74	58	44	0·01	Cloudy
,, 8	29·60	W.	47	45	80	53	46	0·42	Bright

Notes, Short Comments & Answers to Correspondents.

EDITORIAL NOTICE.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side only of the paper.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICE.

UNDER no circumstances do the Proprietors authorise the insertion of loose advertisement circulars and handbills in THE LANCET. Any such announcements are inserted by the newsagents, whom the Proprietors cannot control. At the same time, the Manager will be glad if readers will send him copies of any circulars, with the name and address of the agent through whom they obtain THE LANCET, and the Manager will then endeavour to mitigate the nuisance.

CROYDON GENERAL HOSPITAL.

A Struggling General Practitioner complains that the above institution, by advertising for out-patients on a weekly payment of 6*d.*, is inflicting a serious injury on the profession. We agree with him. When will mechanics and household tenants learn that it is better for them to have their own private medical attendant for ordinary ailments?

Dr. W. Fellowes Fisher.—The paragraph is in the pure quack style. We do not see the name of the "distinguished specialist" in the Medical Register.

"THE MEDICAL OFFICER OF HEALTH AND NOTIFICATION."

To the Editors of THE LANCET.

SIRS,—The subject referred to in "M. L.'s" letter of the 3rd inst. is one of great interest to the profession. Your editorial note accepts the view that there are cases in which an examination may be necessary, and you quote the letter of the English Local Government Board in support of that. If such a case as "M. L." relates had occurred in Scotland the medical officer would at once—as he is enjoined by the Board of Supervision circular to the Dalserf local authority—visit the house, even if a parochial board medical officer were in attendance. The interests of the local authority and parochial board being antagonistic, the medical officer of health would use his discretion as to a diagnostic examination.

I am, Sirs, yours &c.,

Nov. 6th, 1894. COUNTY MEDICAL OFFICER.

THE ANDERSON APPEAL FUND.

THE Civil Rights Defence Committee beg to acknowledge with thanks the following further contributions to the Anderson Appeal Fund:—

Sir Joseph Lister (further subscription)	...	...	£3	19	0		
Sir James Paget	...	...	1	0	0		
Sir E. Saunders	...	...	2	2	0		
Sir Henry Thompson	...	...	2	2	0		
Mr. T. Annandale	...	...	1	1	0		
Dr. W. G. Bacot	...	...	1	1	0		
Mr. J. E. Bartrum	...	...	0	10	0		
Dr. Batterham	...	...	1	0	0		
Dr. Bradley	...	...	1	1	0		
Mr. C. Carter Braine	...	...	1	1	0		
Mr. Woodhouse Braine	...	...	1	1	0		
Mr. J. B. Brookhouse	...	...	0	10	6		
Mr. H. Cayley	...	...	0	10	0		
Mr. Willington Clark	...	...	1	1	0		
Dr. A. T. G. Codd	...	...	1	1	0		
Dr. H. G. Cook	...	...	0	10	6		
Mr. F. S. Craister	...	...	0	10	6		
Mr. H. W. Crowfoot	...	...	1	1	0		
Mr. Deansley	...	...	0	10	6		
Dr. W. Domett Stone	..	..	1	1	0		
Dr. Duka	...	...	...	1	1	0	
Mr. C. J. Evans	...	...	£0	12	6		
Mr. France	...	...	1	1	0		
Mr. Freeland	...	...	0	10	0		
Mr. Gilford	...	...	0	10	0		
Mr. J. Griffiths	...	...	0	10	6		
Mr. Christopher Heath	...	...	1	1	0		
Mr. W. Lenton Heath	...	...	1	1	0		
Mr. C. Johnson	...	...	1	0	0		
Mr. E. Muirhead Little	...	...	1	1	0		
Mr. A. McHattie	...	...	1	1	0		
Mr. N. C. Macnamara	...	...	1	0	0		
Prof. C. J. Pearson	...	...	1	1	0		
Mr. J. R. Sampson	...	...	0	10	0		
Mr. A. R. Saunders	...	...	1	1	0		
Mr. J. Sinclair	...	...	0	10	0		
Mr. J. C. Uhthoff	...	...	1	1	0		
Mr. Jas. Taylor	...	...	1	1	0		
Dr. G. O'Donnell Walton	...	...	1	1	0		
Mr. J. Robinson Wells	...	...	1	1	0		
Mr. A. W. Willett	...	...	1	1	0		
Dr. G. A. Wright	...	...	1	1	0		

In consequence of much misunderstanding on this subject the Committee desires to explain that the fund is being applied strictly to the purpose for which it was established—to enable Mr. Anderson to obtain before the Judicial Committee of the Privy Council a reversal of the decisions and orders of the Courts of Trinidad and Tobago against him which are still in force there, and which, in the language of the appeal made to the profession for funds, "prevent him from returning to Tobago to carry on his practice, collect his debts, or in any way settle his affairs." Mr. Anderson has large amounts of debts due to him in Tobago rapidly becoming statute barred whilst he is unable to collect them, and an extensive estate which necessarily he cannot make the most of in his absence. Were he to attempt to return to resume the practice of his profession, to endeavour to collect the amounts due to him, or to carry on his estate, nothing could prevent the plaintiffs in these actions from at once putting in force their executions against him. Mr. Anderson's strenuous resistance in this country alone stays their hands. That ceasing, their rights under their judgment would stand admitted, and his ruin be completed by forced bankruptcy, which he has successfully struggled against for five years. Under these circumstances the Committee has no hesitation in continuing the appeal for funds to reverse these decisions, which were designated by Sir William Markby and Sir Frederick Pollock, and have since been declared by a jury, to have been judicial persecution. The petitions to the Queen in Council for special leave to appeal in the three cases have now been prepared from materials collected on the spot, and all expenses thus incurred have been defrayed. The next steps are to lodge the petitions and to obtain special leave to appeal; and for the first of these steps, beyond what has already been received, a further amount of £75 is necessary by way of deposit to cover office copies and printing in the Privy Council, and this the Committee hopes the generosity and public spirit of the profession will shortly enable them to make. All communications should be sent to the Secretary, Mr. W. Monnington, 7, Fig-tree-court, Temple, E.C.

M.B.—"A Treatise on Surgery," by Timothy Holmes; "The Science and Art of Surgery," by J. E. Erichsen; "A Manual of General Pathology," by J. F. Payne; "General Pathology," by G. Sims Woodhead; "A Text-book of Pathology," by D. J. Hamilton; "Fevers, their History &c.," by Alexander Collie.

Nautilus.—Our correspondent has omitted to give his address.

"A DRUNKARD'S BRAIN—NO JOKE BUT AWFUL TRUTH."

To the Editors of THE LANCET.

SIRS,—Under this heading Miss Agnes Weston, in the November number of her paper *Ashore and Afloat*, states that at an inquest recently held upon a noted drunkard, on opening his skull, "the odour of alcohol that filled the room was sickening. One of th surgeons then struck a match and held it close to the head. Immediately a blue flame enveloped the whole of the exposed brain." Can you confirm this "awful truth," or is it a made-up story?

I am, Sirs, yours faithfully,

Nov. 5th, 1894. QUERY.

*** WE have the number of *Ashore and Afloat* before us to which our correspondent refers, and we note that the paragraph in question terminates thus: "An inquest reveals truths, and this inquest was no exception to the rule." Miss Weston has done excellent work in the cause of temperance, soberness, and chastity, but, like too many zealots, she cannot refrain from talking about what she does not understand if she believes she will make a point thereby. We need hardly say that the whole episode is the purest invention, and that a rudimentary knowledge of chemistry and pathology would have enabled Miss Weston to detect its obvious falsity.—ED. L.

THE RISKS OF MEDICAL PRACTITIONERS.

THE dangers of medical practitioners are numerous in the ordinary pursuit of their calling. Nor are they limited to personal apprehensions and risks. At times a near connexion with the law of moral responsibility adds materially to their position of insecurity. In a recent case at Solihull a medical man was called in to attend a patient four days before her death. A lawyer was summoned to make her will, which was drawn in favour of the medical man absolutely, to whom she left all her possessions. Relatives subsequently appeared upon the scene and contested the validity of the will. At the trial the judge summed up the evidence, with the result of a verdict against the will, with costs. He pointed out the need that medical men should take the most jealous care to see that everything was "fair, straight, and above board" in such a case—a remark which commends itself to the minds of all who would be above suspicion in similar circumstances.

Ethicus.—We entirely agree with the view taken by our correspondent. He and his principal were, technically, entitled to charge for the visit, or even to take the case; but as a matter of professional conduct "Ethicus" rightly acted for the practitioner ordinarily in attendance

"THE WOMEN'S FREE HOSPITAL, SOUTHAMPTON."

To the Editors of THE LANCET.

SIRS,—You surely are in error when you say that it is a new departure that an institution such as this should have members of its consulting staff living at remote distances from the spot at which their services are likely to be required? I have looked casually over the list of hospitals in Churchill's Directory and have found at least forty examples of this relation. I am on the consulting staff of six institutions where this relation exists, and in at least one of them it has dated over twenty years. I have often been summoned to these institutions to give my services, and have never missed doing so. In the case of the Southampton Hospital, during the year 1893 I was summoned to give my advice in eighteen out of the twenty-four cases, and I attended all these summonses. In four of the cases there were such evident difficulties in the way that I undertook the operations at Mr. Eliot's request. Of these, I regret to say, two died. One other death occurred from the advance of malignant disease after an exploratory operation, which exploratory operation had nothing to do with the death of the patient. This leaves Mr. Eliot's mortality as one in nineteen, a result by no means discouraging for a beginner. I wish I had had it twenty-five years ago, or anything approaching it. If Mr. Eliot could have found anyone in Southampton likely to help him with the experience such as I can place at his disposal I do not suppose anyone outside Southampton would have been asked to take the place and responsibility I willingly accepted. Southampton is a place large enough and of sufficient importance to be a local centre of abdominal surgery. Mr. Eliot is a brilliant, conscientious young surgeon, and it is alike a pride and a pleasure to me to help him on his way, and I am sure you will not say, after the facts I have given above, that I have taken an office of a purely ornamental character.

As to the arrangements for dealing with the in-patients, that is of a purely temporary character for which I am wholly responsible. The first effort at the hospital was made in the usual style, with the out-patients in the basement, and it was found (not predicted) a most faulty arrangement. The committee are now engaged in building a most complete out-patient department, and when funds permit they will build an equally well-equipped building for serious operation cases. Meantime they have accomplished a great reform, which I believe ought to be brought about in *all* hospitals, the complete separation of the two departments.

I am, Sirs, yours faithfully,

The Crescent, Birmingham, Oct. 22nd, 1894. LAWSON TAIT.

"A VERY VALUABLE MEDICINE."

A CORRESPONDENT writes to us as follows:—"I have just received from a Zulu *confrère* 'a very valuable medicine.' It is the bark of a root, 'which you should make a person nibble when you are not quite sure what is the matter with him.'" It would seem that the untutored mind of the African perceives not only the value but the necessity, occasionally, of the *placebo*.

Medical Student.—Any good instrument-maker will be able to assist our correspondent.

"EPIDERMIN"?

To the Editors of THE LANCET.

SIRS,—In reference to my letter in THE LANCET of Oct. 27th, we have discovered that the above (epidermin) is an unguent base, prepared by Messrs. Warner and Co., and specially recommended in preference to those bases usually adopted for ointments for skin affections &c. As a practical chemist, I think that the practice of prescribing little-known remedies, and those procurable only with difficulty, without indicating their source, is not advisable. It is obviously perplexing to the dispenser, and may give the patient the annoyance of waiting.

I am, Sirs, yours faithfully,

Lewisham, S.E., Nov. 2nd, 1894. C. A. BROOKES.

*** We agree with our correspondent. But the value of a particular preparation may be well known occasionally to a medical man when he has never heard the name of the agent for its sale.—ED. L.

MEDICAL CHARITY AT THE CAPE.

The *Cape Times* of Sept. 20th contains a long letter signed by Charles E. Piers, M.B., explaining why he resigned the medical officership of the Cape Town Free Dispensary after a tenure of only three months. He found that the work was overwhelming and underpaid; in short that, if a charitable institution, he was doing most of the charity at the expense of his physique and his *morale* alike and to the disadvantage of the patients, who had to be seen in too short a time. This is an old story in medical charity and even in medical aid associations, where the pride of the able-bodied workmen should save them from the mistake. "In July," says Dr. Piers, "I found that over 500 patients had attended at the consulting-room and that I had paid 177 visits to patients at their own homes. As I explained to the committee, my pay being at the rate of 6*s.* 8*d.* a day, I found I was getting not quite 3½*d.* for the patients attended, including visits—often at very out-of-the-way places." We look to our colonies to pay labour more justly than this—even medical labour, which, by some strange misfortune, is considered largely due on gratuitous terms. Dr. Piers says there are great numbers of poor persons in Cape Town needing special provisions for their medical attendance. But these should be made by the Government or the municipality; at any rate, they should not be a heavy burden on the back of the medical officer of a dispensary. We are glad to see that the *Cape Times* in a leading article argues in favour of a reform of arrangements so unjust and inadequate.

Mrs. H. M.—We have no definite information of the climate of the particular African district mentioned by our correspondent.

"ACTION AGAINST A COLCHESTER MEDICAL MAN."

To the Editors of THE LANCET.

SIRS,—In reference to the annotation in the last issue of THE LANCET headed as above I enclose you my letter to the *Essex County Standard*, and also beg to state the action was no suggestion of my own, or brought about in a spirit of animus against Dr. Cook. I was called in (as my letter states) at a critical time, to undertake a dangerous case at a risk. As a witness in supporting the charge against Dr. Cook I was compelled to do what was only a public duty.—Yours faithfully,

Old Bank, Colchester, Nov. 4th, 1894. W. B. WALLIS, L.R.C.S.Irel.

*** Mr. Wallis will not easily persuade the profession that it was his duty to go into court to disapprove of treatment which was approved by Dr. Handfield-Jones and the leading practitioners of his own neighbourhood. Still less will he justify himself in carrying the case into the lay newspapers and there discussing the time when to remove the placenta and the dose of opium proper to such cases This he has done in the letter to the editor of the *Essex County Standard*, which he encloses.—ED. L.

"KRESOLINE VAPOUR IN DIPHTHERIA."

WITH reference to the note in our issue of Nov. 3rd upon the treatment of diphtheria by kresoline vapour, we have received from Messrs. F. C. Calvert and Co. of Manchester some printed testimony to the value of carbolic vapour as an aerial disinfectant. Undoubtedly one of the advantages of its use in this manner is the harmlessness of the vapour, which is in contradistinction to the corrosive and suffocative action of many medicated fumes.

TESTIMONIAL FOR OATMEAL.

AN ardent testimony in praise of a certain kind of oatmeal, signed by Edward C. Anderson, M.A., M.D. Cantab., of 362, Moseley-road, Birmingham, is sent us in a printed circular. Dr. Anderson should take steps to prevent its dissemination.

ERRATUM.—In the report of the Tenth Meeting of Fellows and Members of the Royal College of Surgeons of England, published in our last issue, on p. 1067, thirty-sixth line from the top of the second column, by a typographical error the word "senseless" was printed for *ceaseless*.

During the week marked copies of the following newspapers have been received:—*Western Morning News, Irish Daily Independent, Derbyshire Times, Ayr Observer, Kingston Express, Bradford Observer, Glasgow Herald, Liverpool Mercury, Leighton Buzzard Observer, Sheffield Telegraph, Norwich Mercury, Philanthropist, Public Opinion, Cheshire Evening Echo, Local Government Chronicle, Reading Mercury, Weekly Free Press and Aberdeen Herald, Sanitary Record, Hertfordshire Mercury, West Middlesex Standard, City Press, Manchester Courier, Public Health, Guy's Hospital Gazette, Local Government Journal, West Middlesex Advertiser, Surrey Advertiser, El Relatir Maracaibo (Venezuela), Times of India, Builder, Levant Herald, Perth Constitutional, Barrow Herald, Pioneer Mail, Architect, Isle of Man Times, Bucks Advertiser and Aylesbury News, Baker's Times, West London Reporter, Cheltenham Examiner, Banbury Guardian, Ilfracombe Gazette, Ormskirk Advertiser, Liverpool Daily Post, Leeds Mercury, Yorkshire Post, Bristol Mercury, The Brief, Glamorgan Free Press, Cork Examiner, Isle of Wight Express, Freeman's Journal, Spalding Free Press, Hull Daily Mail, Birmingham Daily Post, Australian Medical Journal, &c., &c.*

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